MEDICAL RECORD

A National Review of Medicine and Surgery, Established 1843

VOL. 155, No. 3 WEDNESDAY, FEBRUARY 4, 1942 WHOLE No. 2706

Colds and the Gallup Poll

It is extremely difficult to obtain exact statistical figures on colds and their hygienic consequences. This is a major problem of industrial hygiene. Estimates some years ago put the annual cost of colds in the United States at from five hundred million dollars to two billion dollars and the productive time lost at one hundred million working days a year. The reduction of these figures by all possible means is worthwhile, and the first step is the knowledge of fundamental statistics.

In the week ending December 24th, a survey by the American Institute of Public Opinion (George Gallup, director) found colds reported in one-third of American homes, with an estimated total of eighteen million persons afflicted. The incidence of colds was the same as it was in a similar survey a little over a month ago, during the week ending November 15th. More than three million man-days of work were lost in war industries or war-connected industries from illness during December, and the common cold accounted for one-half of this lost time, a recent institute study found.

The survey of the Gallup poll showed that the highest incidence of colds was reported among children under ten years of age, with approximately one child in every five afflicted, as compared to only one person in every eight among age groups over ten years. The percentage of persons reported with colds in December was: under ten years, twenty-two percent; ten to nineteen years, thirteen percent; twenty to twenty-nine years, twelve percent; thirty to forty-nine years, thirteen percent; fifty years and over, thirteen percent. Among the eighteen million cold sufferers in the December week period, approximately one in four was treated by a physician, the survey showed.

The number of colds in both the November and December week periods was considerably higher than in October. In the week ending October 11th, a similar survey indicated thirteen million persons suffering from colds.

Reliable statistics regarding the common cold are still rare. Cases of common cold are supposed to outnumber any other disease twenty-five to one. Previous research work in America has shown that every person, on an average, has 3.7 colds a year. There are, of course, many people who catch cold more frequently than this, as surveys in industrial plants show.

The common cold today has become an increasingly important national health problem, as every working day counts in our efforts to build up a maximum of national defense. The surveys of the Gallup poll may lay the basis for a better understanding of the spread of the common cold.

New Tests of Submarine Dangers

Dr. J. B. S. Haldane, British physiologist, has made important new experiments in testing the effects on the body of various gases under high pressures, imitating the conditions in submarines. Twenty volunteers have assisted him, one of them Dr. Juan Negrin, last loyalist Prime Minister of Spain, now a refugee in London. Negrin himself has undergone a series of these painful and dangerous experiments.

The experiments have just been reported in part by Haldane to the official journal of the British Association for the Advancement of Science. According to a report of the North American Newspaper Alliance, the work duplicates to some extent that carried on here by the United States Navy Medical Corps. The tests with Dr. Negrin and his associates showed that under ten atmospheres pressure consciousness may be lost without warning in about five minutes when there is a concentration of one percent of carbon dioxide.

It was found that oxygen under high pressure becomes a powerful convulsant, causing a fit which might be fatal to a man in a sunken submarine. The report said that the use of helium mixtures to prevent bends was of doubtful value. One physiologist, according to the report of the North American Newspaper Alliance, lay for a long time in a bed of cracked ice at abnormal atmospheric pressures to determine the combined effects of cold and pressure. The experiment showed that the extreme cold which might be encountered by the crew of a sunken submarine might to some extent offset the effects of the high pressure. The human guinea pigs have undergone convulsions as severe as those in an extreme epileptic fit. They have had almost unbearable headaches, and they have been in frequent danger of death from air embolism.

We know from a previous report by Captain E. W.

Brown, U. S. Navy, that the upper permissible limit for carbon dioxide in American submarines is prescribed as three percent and the lower limit of oxygen as seventeen percent, thus including a liberal factor of safety. The most notable safety device developed within recent years is the escape appliance, known popularly as the submarine "lung", and designed for individual escape from the submarine. It embodies the principles of the oxygen breathing apparatus developed for mine rescue work, but adapted for submarine operation. A number of fatal accidents have happened when men, disregarding their instructions, have come suddenly to the surface.

Cold in Russia

Reports from the German-Russian battlefronts tell of the frightful sufferings of the soldiers from the cold. It is not the cold alone which produces dangerous frostbite and gangrene and causes wholesale amputations, but the disastrous combination of cold, wind and insufficient clothing during duty, with insufficient heat and shelter for the resting troops.

On the Moscow front the cold runs from twenty to thirty degrees below zero, and perhaps as low as forty and fifty below; on the Leningrad front, it may even go to sixty degrees below zero, and along the Sea of Azov, in the "warm" South, to twenty below. Nansen and other explorers of the Arctic withstood temperatures of seventy and more degrees below zero, but those were men of exceptionally strong will and were well equipped and protected against the Arctic cold. There are still colder regions on the earth than the North Pole. The coldest known spot is near Werchojansk in North Central Siberia where the thermometer goes down to 95 below zero, and where even in summer the temperatures never rises above 55° F. People live there the year round and they know how to keep warm.

The combination of cold and wind is hard to tolerate for the soldier who must remain in the open. During his Antarctic experiments, Dr. Paul Siple developed a formula to measure the effects of wind on the heat loss of the body. He found that, whereas a person wearing only a medium heavy sweater is reasonably warm at zero temperature, he quickly becomes cold if there is a wind of even ten miles an hour velocity, because his heat loss increases in proportion to the increase in the velocity of the wind. The heat film around the body must not be brushed off. Nothing protects the body from this dangerous loss better than fur.

Good food, hot beverages, and warm shelter must not be denied the soldiers active in the open. Armies in retreat cannot afford these necessities, and therefore are terribly endangered by the cold. When Napoleon's Grand Army retreated from Moscow in the winter of 1812, fifteen thousand men are said to have been frozen on the way to Vilna. They were exhausted by sickness and fatigue. S. Wright says, in *Applied Physiology*, that as a result of fatigue an individual wandering in the cold surrenders to an overpowering desire to sleep. During this unconscious state, temperature regulation is disturbed and much heat is lost. The body temperature falls; at 68° F. coma sets in and death results. It has been pointed out that a fall of temperature depresses the dissociation of oxyhemoglobin and tends to lower oxidation in the tissues.

It seems that the Russian soldiers can stand the cold better than the Germans, not from an innate, natural disposition but because they know how to protect themselves better than their enemies. People who are accustomed to living in a very cold climate, know many small tricks in clothing and housing that are unknown to men coming from a more moderate climate. And it may be just these small things which make all the difference in the power to endure extreme and pitiless cold.

Rheumatism and Its Treatment

Rheumatism in its various forms is among the universal diseases and therefore manifestations and treatment are of international concern. A book by Dr. Bertram S. Nisse, London, was recently published in which is discussed rheumatic fever, forms of fibrositis and arthritis, including gout. The chapter on rheumatic fever is brief and to the point but covers the subject sufficiently. Its differential diagnosis and clinical symptoms are dealt with succinctly but adequately and the hints on treatment throughout its course and during convalescence could hardly be bettered. Fibrositis is discussed from all aspects. The question of the effect of septic foci and metabolic disorders is given the attention its importance deserves. Regional fibrositis, lumbago, sciatica, and the other types of fibrositis are handled effectively. The problem of sciatica and its methods of treatment are set forth concisely, especially with regard to the efficacy of short-wave therapy. Rheumatoid arthritis, osteoarthritis, regional arthritis, and gout take up the greater part of the book, and rightly so. Etiology, uncertain and doubtful, perhaps, generally in the rheumatic diseases, is gone over with becoming reserve. Treatment and differential diagnosis are the outstanding features of the book. In no disease has there been recommended such a multiplicity of remedies as in rheumatism. The author has shown great discretion in picking out those which experience has proved to be most effective, or the newer ones which promise good results.

The book is eminently practical, written in simple language, and superfluities are discarded. It deals with a big subject concisely, omitting no essential points. It is a *vade mecum* in respect to rheumatic diseases and disorders especially for general practitioners.

Papers and Addresses

THE TREATMENT OF LOCAL INFECTIONS BY THE APPLICATION OF BACTERIAL ANTIGENS*

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Innumerable therapeutic agents are available for the management of local infections. This applies particularly to those intended to control varicose ulcer and other infections of the skin and subcutaneous tissues. The multiplicity of agents and methods suggest that occasional success is obtained with all of them and that none of them are universally applicable. After discarding many therapeutic methods we concentrated our efforts on acetylbetamethylcholine chloride by iontophoresis in the management of varicose ulcers. The results obtained were superior to those obtained by other procedures but, the method required hospitalization of the patient and the availability of a special apparatus and a technician. Often these resources are not at hand and it is economically impossible for the patient to obtain hospital care. Recently a bacterial antigen ointment was employed successfully by Boenke (1) in the treatment of indolent ulcers. This method circumvented the necessity for special equipment and seemed suitable for nonhospitalized cases which constitute the majority of patients of this type.

We employed the bacterial antigen, both as a liquid and ointment[1], in a variety of external ulcers and local infections. Of the twenty-five cases studied, ten were varicose ulcers. The series also included diabetics and arteriosclerotic individuals with ulcers, decubital ulcers as well as those associated with fungus infection or trauma. The other dermal infections treated were an infected human bite, an infected postoperative wound and carbuncles.

The method employed in treatment was first to apply the antigen liquid as a wet soak for a period of time which ranged from two to five days. Then the antigen ointment was used as a bi-daily application. All lesions were closely watched, first for the effect of treatment on the infection itself, secondly for the effects on local symptoms, and thirdly on the duration of therapy necessary to bring about good results. If no progress was noted after two weeks use of the antigens, the therapy was deemed ineffective. Most of the patients were observed in the hospital ward. The few patients who were followed in the clinic were observed once a week.

The gratifying results obtained with the antigen liquid and ointment in cases which had resisted other treatment make publication of the following cases fully warranted.

*This study was conducted at the Flower and Fifth Avenue Hospitals, New York.

[1]Antipeol liquid is prepared from sterile filtrates of Staphylococcus aureus, albus, and citreus, Streptococcus pyogenes, viridans, and hemolyticus, and Bacillus pyocyaneus. Antipeol ointment contains antipeol liquid in a hydrous wool fat base incorporating zinc oxide, sulfo-ichthyolate of ammonium, and sodium borate. Manufacturer: Bio-Therapeutic Laboratories, Inc., East Orange, N. J.

Case Reports

Case I.—The patient, C. C., was a forty-three year old colored male with a varicose ulcer over the inner aspect of the right lower leg which did not respond to the usual methods of treatment over a three month period (gentian violet, zinc oxide boot, etc.). The ulcer was about four cm. in diameter, rather superficial with chronically infected granulation tissue. Wet dressings with the antigen liquid were begun on June 13, 1941. They were continued for two days and then antigen ointment was applied twice daily. The ulcer showed rapid signs of healing which was completed twenty-three days after the beginning of treatment.

Case II.—R. A., a forty-four year old colored female with a varicose ulcer, painful, on the outer aspect of the left leg. The ulcer was about three cm. in diameter with evidence of chronic inflammation at the base and around the sides. The ulcer had been present for about six months. The antigen ointment was applied twice daily for a period totaling thirty-one days. Pain disappeared in the first three days and after the first week signs of infection were gone and new growth of skin was beginning. After thirty-one days of such treatment the ulcer healed completely.

Case III.—K. P. was a sixty-eight year old female with a varicose ulcer; it was painful and located on the mid-anterior aspect of the right leg of two weeks duration. The ulcer was about the size of a dime. Treatment consisted of bi-daily applications of the antigen ointment and the patient was checked once weekly in the out-patient department. During the first week of treatment she reported that the pain in the ulcer had disappeared and likewise that healing had definitely begun. The treatment was maintained for forty-two days after which the ulcer had practically disappeared. The ulcer before and after treatment is shown in the accompanying photographs (Figs. 1 and 1a).

Case IV.—J. T., a forty-five year old white male had received an injury to the outer aspect of the right ankle about ten years ago; this area broke down and formed an ulcer which would alternately heal and break down. He sought admission to the hospital because the ulcer remained unhealed for the past eight months. The ulcer was located over the external malleolus of the right fibula; it was about three cm. in diameter, very painful, with an elevated edge around it; the latter felt so callous that it appeared calcified. The surface of the ulcer was covered by chronic infected granulation tissue. Treatment was started on June 13, 1941 with two days of wet soaks of the antigen liquid. The pain was definitely diminished after this period. The antigen ointment was then applied twice daily until

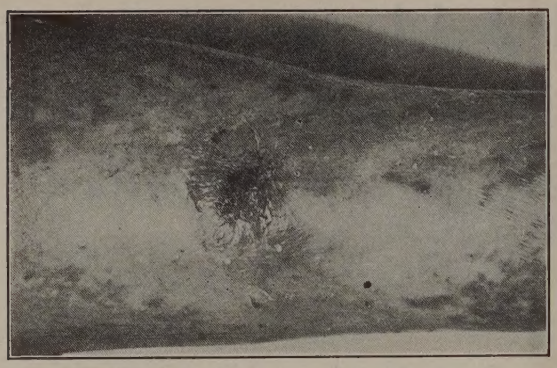

FIG. 1.—Case III. K. P. Varicose ulcer on the right leg, before treatment.

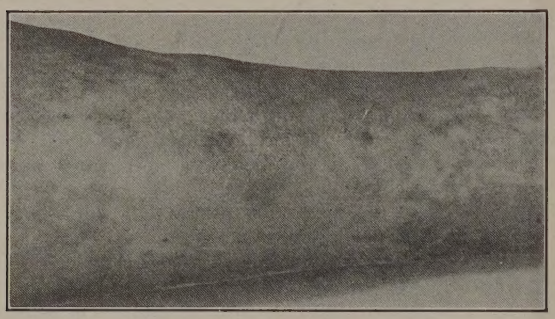

FIG. 1a.—Same patient as in Fig. 1 after treatment.

the ulcer had completely healed; the latter was noted on July 30th, after forty-seven days of daily treatment. It was particularly noteworthy that the pain disappeared by the fourth day of treatment, signs of infection in one week and that complete healing was achieved. Figs. 2 and 2a show the lesion before and after treatment.

CASE V.—C. R., a fifty-two year old white female with two varicose ulcers each about one and one-half cm. in diameter located over the lower outer aspect of the left leg. These ulcers had been present for about two months with chronic indurated edges and purulent bases. Pain in them was marked. Various forms of therapy had been of no avail. The antigen ointment was applied twice daily. In the first four days pain was ameliorated and all evidences of infection were disappearing. Treatment was kept up for four weeks and at the end of this period of time both ulcers were practically entirely healed.

CASE VI.—V. D. was a forty-year old white female with a varicose ulcer on the anterior aspect of the left lower leg with an infected base about three cm. in diameter, elevated edge and with a good deal of dry scaly skin around the ulcer. This ulcer had been present for more than six months and had not responded to a variety of therapeutic measures. After two days of constant application of the antigen liquid, antigen ointment was applied twice daily. The patient was followed weekly in the out-patient department for six weeks. Within the first few days after beginning therapy, the signs of infection in the base of and around the ulcer cleared up and healthy granulations were present in the first week. During the period of observation new skin could be seen slowly growing in and obliterating the ulcer. After forty-two days of treatment the ulcer was about one-fourth its original size and was obviously markedly improved. The condition before and after treatment is shown in the accompanying photographs (Figs. 3 and 3a).

CASE VII.—J. W., a fifty-eight year old male with multiple small deep varicose ulcers on the left leg. These had been present uninterruptedly for six months. They were very painful and constantly discharged purulent material. Treatment was begun with two days of the antigen liquid, applied constantly, and then followed by the application of antigen ointment twice daily for six weeks. In the first week pain disappeared completely from all ulcers and the purulent discharge ceased. After two weeks the ulcers on the inner side of the leg closed and by the sixth week only one or two ulcers remained open. The results after forty-two days of the above described treatment yielded very good results. See accompanying illustration (Fig. 4).

CASE VIII.—J. S. was a fifty-five year old colored male with two very large varicose ulcers on the outer aspect of the right ankle and three small ones on the inner aspect. These ulcers had been present for at least four months and were steadily becoming worse. Severe pain was present. Treatment with the antigen ointment was started as a bi-daily application; after four days it was noted that the pain was considerably less and after seven days healthy granulation tissue became evident. From this time on new skin began to grow in from the edges. Treatment was continued for

FIG. 2.—Case IV. J. T. Ulcer on the outer aspect of the right ankle, before treatment.

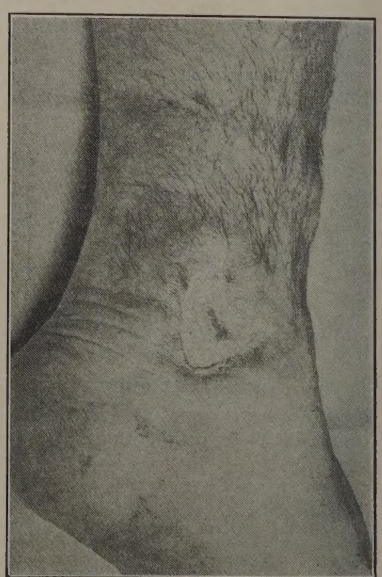

FIG. 2a.—Same patient as in Fig. 2 after treatment.

FIG. 3.—Case VI. V. D. Varicose ulcer on anterior aspect of left leg before treatment.

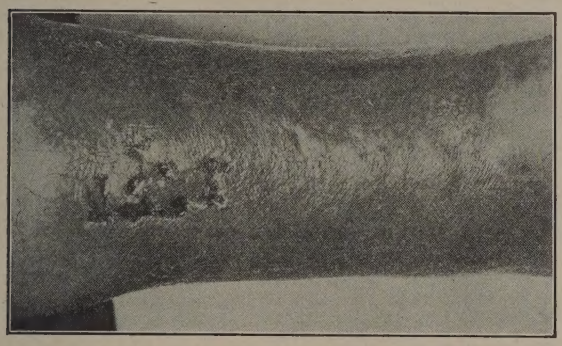

FIG. 3a.—Same patient as in Fig. 3 after treatment.

six weeks. The large ulcers over the outer aspect of the ankle, which were at least four cm. in diameter before treatment was begun, were reduced to half their size and to all intents and purposes those over the inner aspect were closed.

CASE IX.—F. M. was a fifty-eight year old white male with two large varicose ulcers over the external malleolus of the left foot. The ulcers had been there for approximately two and one-half months. For the first three days treatment consisted of the application of the antigen liquid and then treatment was continued with the antigen ointment twice daily for four weeks. Within the first few days of treatment all signs of infection cleared up and at the conclusion of the period of treatment, the ulcers had been reduced to one-half their original size.

CASE X.—W. S., a thirty-nine year old white female with varicose ulcer about two cm. in diameter just above the external malleolus of the left ankle. This has been present for about four weeks. The base of the ulcer contained purulent material and was moderately painful. Treatment with the antigen ointment was started as a bi-daily application. The pain disappeared by the third day and it was noted that the base of the ulcer was clean by the sixth day. Treatment was continued for twenty-one days and after this period it was noted that the ulcer was reduced to a diameter of about three mm.

CASE XI.—B. V., a fifty-eight year old white female, diabetic, who developed an infection with subsequent ulceration on the dorsum of the right foot with much cellulitis around it. Wet soaks of the antigen liquid were applied for two days. The surrounding inflammation definitely subsided after this period of time. The antigen ointment was then applied. Eight more days were necessary before the infected ulcer healed. This however, was noticeably very rapid.

CASE XII.—G. P., a sixty-five year old diabetic, white male, who had an infection on the dorsum of the hand with surrounding cellulitis and lymphangitis. Wet soaks of the antigen liquid were applied for three days. In this period of time it was noted that the cellulitis and lymphangitis cleared. The antigen ointment was then applied and only four more days were necessary to completely clear up the entire infection.

CASE XIII.—C. I. was a sixty-four year old diabetic male. He had an ulcer about five mm. in diameter with a purulent discharge on the sole of the right foot. This ulcer had been present for about six months. The sinus tract could be probed leading to bone indicating that there was an underlying osteomyelitis. The antigen liquid was applied for three days. After this period of time the inflammation around the ulcer subsided but the discharge was not altered. The antigen ointment was applied for two weeks. The lesion remained unimproved.

CASE XIV.—A. R., a sixty-six year old white male, arteriosclerotic, suffered from a cerebral accident one year ago with resultant right hemiplegia. About three months before admission to the hospital a small infection developed on the outer aspect of the heel of the right foot. This infection became a small purulent ulcerated area about the size of a dime, very painful, and did not respond to any form of therapy. On June 6, 1941, the antigen liquid was applied for three days. The patient reported marked amelioration of the pain. The discharge subsided to a large extent and the cellulitis around the ulcer improved markedly. The antigen ointment was then applied twice daily. By June 17th, the purulent discharge ceased completely and a clean granulating base was apparent and the ulcer itself was decreasing in size. On June 27th, after twenty-two days of treatment, the ulcer was completely healed.

CASE XV.—H. B., a forty-one year old colored male with varicose ulcer about one cm. in diameter over the lower anterior aspect of the right leg. The ulcer had been present for three weeks. Pain was slight and there was evidence of infection in and around the ulcer. Patient was followed in the out-patient department weekly for four weeks. The antigen liquid was applied for two days and then the antigen ointment twice daily

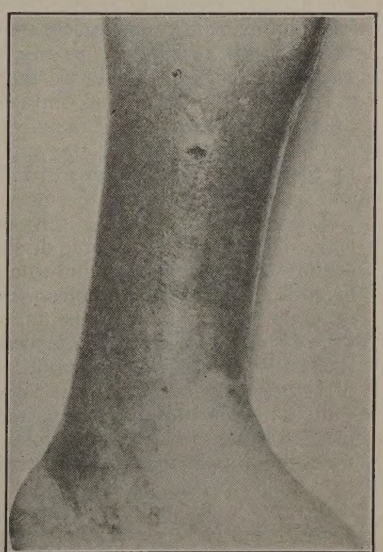

FIG. 4.—Case VII. J. W. Varicose ulcer on the left leg, after treatment.

for the duration of treatment. In the first week pain disappeared and healthy granulations were present. By the end of the fourth week the ulcer had completely healed.

CASE XVI.—M. W., a forty-five year old white female, diabetic, with a very large sloughing gangrenous ulcer four cm. in diameter over the dorsum of the left foot. The antigen ointment was applied twice daily for a period of thirty-two days. In the first five days surrounding inflammation and a good deal of the necrotic slough cleared. However, no further improvement was noted, probably because of the depth and extent of the ulcer.

used continuously and then the antigen ointment was applied twice daily. Treatment was maintained for twenty-five days. No objective evidence of improvement was noted.

CASE XX.—S. B., a seventy-two year old white female, senile and arteriosclerotic permanently bedridden with a large deep decubitus ulcer over the sacrum. The antigen ointment was applied twice daily for about three weeks. No evidence of any improvement.

CASE XXI.—L. S., a seventy-four year old white female with a large decubitus ulcer over the left buttock. The base of the ulcer was very deep with evidence of

	Type of Treatment; No. of Days				Results			
Lesion	Antipeol liquid	Antipeol ointment	Duration of treatment	Days to clear infection	Cured	Marked imp.	Unimproved	Remarks
Varicose ulcer	2	21	23	6	x			
		42	42	5		x		
	2	40	42	7		x		
	2	40	42	7		x		
		42	42	7		x		
		31	31	7	x			
		28	28	4		x		
	2	26	28	7	x			
	3	25	28	5		x		
		21	21	6		x		
Diabetic ulcer	3	14	17				x	Surrounding inflammation cleared in three days; osteomyelitis present
	5	18	23				x	Surrounding inflammation cleared
	2	8	10	10	x			Superficial infection
		32	32	Slight in 5			x	Deep gangrenous slough
	3	4	7	7	x			Superficial infection
Arteriosclerotic ulcer	3	19	22	12	x			
Decubitus ulcer		21	21				x	
		25	25				x	
Traumatic ulcer	2	45	47	7	x			Second infection
Fungous ulcer		11	11	7	x			
Congestive heart failure—ulcer	2	23	25				x	
Carbuncle	3	9	12	12		x		
		12	12	5	x			
Infected human bite	3	5	8	3	x			
Infected operative wound	2	12	14	2-3	x			
				Total No.	11	8	6=	25 cases
				Percent	44	32	24=	100 percent

CASE XVII.—B. S., a thirty-six year old white male who had an irregular ulcer over the dorsum of the right foot approximately two centimeters in diameter, superficial with a yellowish necrotic surface. This ulcer was located close to the big toe and there was evidence of epidermophytosis around contiguous toes. Evidently the latter was the cause of the ulcer plus secondary infection. Antipeol ointment was applied twice daily and by the seventh day all signs of infection had cleared, and by the eleventh day the ulcer was entirely gone.

CASE XVIII.—N. O., a sixty-one year old white male, diabetic, with a chronic discharging ulcer on the dorsum of the right foot due to an underlying osteomyelitis. Skin around the ulcer presented evidence of cellulitis. Wet soaks with the antigen liquid were applied for five days, and then for another eighteen days the antigen ointment was applied twice daily. In the first three days of treatment it was noted that the cellulitis cleared up, however, after twenty-three days of treatment no change was noted in the size of the ulcerated area or in the character of the discharge.

CASE XIX.—A. B., a sixty-six year old male with congestive heart failure of long duration developed several small ulcers over the lower extremities due to persistent edema. The discharge from the ulcers was serosanguineous. For two days the antigen liquid was

infection. The antigen ointment was applied twice daily for twenty-five days. The only noticeable improvement was a clearing of the infection in the base of the ulcer.

CASE XXII.—N. G., a forty-four year old white male who had developed a carbuncle about two and one-half cm. in diameter over the left forearm was treated by wet soaks of the antigen liquid for three days. After this period of time the surrounding cellulitis was definitely less and the infection appeared very well localized. The antigen ointment was then applied twice daily and two days later the carbuncle began to discharge and the center to break down. Two days later the whole carbuncle was entirely open and the base exposed. After the twelfth day of treatment the lesion was entirely healed and its size reduced to a crust a few millimeters in thickness. This is an example of a carbuncle treated without incision and with excellent results.

CASE XXIII.—G. N., a sixty-two year old diabetic with left-sided hemiplegia developed a large carbuncle behind the left shoulder. One or two tracts had begun to drain when she was first seen. The antigen ointment was applied twice daily. On the third day of treatment no cellulitis remained and the entire carbuncle was sloughing off. On the fifth day all purulent ma-

terial had cleared up and a clean granulating surface was present. Seven more days were required before healing was complete.

Case XXIV.—G. M., a fifty-six year old white male, had an infected human bite on the dorsum of the middle finger of the right hand of ten days' duration. Wet soaks with the antigen liquid were started on June 5, 1941, and continued for three days. The lesion was an infected irregular area, about one cm. in diameter with a good deal of cellulitis around the ulcer. By the third day after treatment the cellulitis subsided and healthy granulations were present in the ulcerated area. From this time on, pain disappeared and eight days after the beginning of treatment the ulcer had completely healed.

Case XXV.—J. H., a thirty-three year old colored male who had an infected operative wound which had not responded to the usual routine measures for twenty-eight days after operation (appendectomy; no cultures taken). On June 8, 1941, the antigen liquid was applied for two days as a wet dressing. Drainage definitely lessened after this period and then the antigen ointment was applied, twice daily. The wound healed quickly, requiring about two weeks.

Comments

The varicose ulcer cases studied were all chronic and did not respond to usual measures of treatment. All showed infection at the base. Use of the antigen liquid and ointment brought about three complete cures, with marked improvement in the other seven. In the latter it was felt that extension of treatment for a short period longer would have resulted in cures. Noteworthy was the disappearance of pain within two to four days after beginning of antigen application; all signs of infection usually cleared up within one week, leaving healthy granulation tissue. This quick obviation of infection evidently aided healing. Since the same good results were seen when the ointment was the sole means of treatment, the effectiveness of the antigen liquid as compared to the antigen ointment could not be determined. The covering over of the ulcers with normal skin varied in the individual cases, depending, of course, upon the depth and duration of the ulcerated areas. When the usually stubborn nature of varicose ulcers is brought to mind, the application of antigens in such pathology is certainly worth remembering.

Diabetic ulcers treated with bacterial antigens in liquid or ointment form responded extremely well where the infection was superficial, with evidences of cellulitis usually clearing within two to seven days and healing becoming complete within another week. It is understandable why no effective results were obtained when the infection was very deep, such as in one case with underlying osteomyelitis and another with deep slough. One case of decubitus ulcer and one case of a leg ulcer with long-standing edema also failed to show real improvement.

On the other hand, excellent results were obtained with antigen treatment of a fungous ulcer with secondary infection and in a traumatic ulcer of long duration which had shown no manifest improvement from any other form of treatment. Infected arteriosclerotic ulcers, too, showed definite eradication of the infection. Two patients with carbuncles showed remarkable and rapid healing. The carbuncles received no surgical treatment and both were healed after twelve days of application of the antigen liquid and antigen ointment.

Summary and Conclusions

From results obtained by treatment of these twenty-five cases of varicose and other ulcers, and other external local infections, the following conclusions can be drawn:

1. The antigen liquid and antigen ointment produced noteworthy results in cases which had not responded to usual methods of treatment.

2. The application of these antigens rapidly alleviated pain in ulcerous conditions, particularly in the case of varicose and diabetic ulcers. Except in a relatively few deepseated infectious states, reduction of inflammation, removal of infection, granulation and healing were produced in a relatively short time.

3. No untoward, irritating effects were seen that could be attributed to the antigen preparations.

4. The therapeutic use of the antigen liquid and antigen ointment products are warranted in the treatment of varicose ulcers, diabetic ulcers (especially with superficial infections), selected fungous ulcers, certain traumatic ulcers, arteriosclerotic ulcers, and in various other local pyogenic infections such as carbuncles.

Reference

1. Boenke, R.: *Archives of Dermatology and Syphilology*, 43:1010 (June) 1941.

1 East 105th Street

OPERATIVE REDUCTION OF METATARSAL FRACTURES

HENRY MILCH
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Fractures of the metacarpal or metatarsal bones often prove more troublesome than even more complicated fractures of the longer tubular bones. As a consequence of the action of the intrinsic muscles of the hand or foot and the difficulty in securing complete reduction, the surgeon is occasionally content with a "fairly good", instead of an "accurate" reduction. Yet every one, with any experience in the treatment of these fractures, will readily testify to the dire consequences which may result from inadequate reduction. In the hand, the unesthetic appearance and the limitation of function constitute a serious handicap. In the foot, because of its weight bearing function, the excruciating pain which is not uncommonly associated with metatarsal mal-union, becomes a source of major disability.

Such patients are frequently unable to work or even to walk or stand. To check the pain, their feet are padded, the shoes are modified and finally moulded to the feet to afford an equitable distribution of weight bearing. In the worst cases, all these measures may be futile and the patient finally falls into the hands of the surgeon, who, in despair, recommends excision of one or more of the malaligned metatarsal heads. Occasionally these heads are excised through plantar incisions, thus adding to the already present disturbance, the

burden of painful scars. Were this all, it would be bad enough, but the worst of the matter is that excision of one head, even through a dorsal incision, leads to a new and equally painful redistribution of weight, which invites excision of another and then another metatarsal head. As may be imagined, the result is disastrous and must be avoided. This can be assured only by the most meticulous attention to anatomical reduction of the fragments.

FIG. 1.—Transverse fracture of the second metatarsal, oblique fracture of the third and fourth metatarsal, with dislocation of the fifth toe, before reduction.

It is immaterial whether the reduction be accomplished by closed or open method; the essential consideration appears to be the correction of both translational and angular displacements. Indeed, open reduction should be employed as a last resort and only in the conviction that more conservative methods have proven or must prove unsuccessful.

Manipulation under the fluoroscope, flexion and pulsion by the method of Jahss, traction applied through the skin, or directly to the skeleton, itself, have each been found of value, especially in single fractures. But where multiple fractures occur, the difficulties are more than proportionately increased and the impossibility of adequately reducing one of the fractures may compromise the result obtained in the others. In such cases open reduction affords the best hope of expeditious and satisfactory treatment. This is well illustrated by a typical case.

Case Report

Mrs. C. B., aged fifty-four, suffered a fracture of the shafts of the second, third and fourth left metatarsals, with a dislocation of the fifth toe, as a result of a misstep (Fig. 1). An attempt at closed reduction was made by her attending physician, with but little improvement in the condition. The fracture of the second metatarsal being transverse, it was believed that if the ends of this fracture could be engaged, the oblique fractures of the third and fourth metatarsals could be held in position. But, strangely enough, the oblique fractures could be reduced under the fluoroscope, but the transverse fracture defied all manipulative efforts. As soon as traction or pressure was released, the displacement recurred. Because of the patient's occupation as a church organist, the need of a painless, flexible foot was paramount and operative intervention seemed justified.

On the following day open reduction was carried out under local anesthesia, through a dorsal incision in the plane of the middle metatarsal. Inspection disclosed the reason for the failure of closed reduction. The dorsal interosseous muscle completely enveloped the proximal end of the second metatarsal, so that even through the open wound manipulative reduction was impossible, until after this muscle interposition had been released. Thereupon each of the bones was separately reduced and maintained by 40 day chromic suture, passed through drill holes in the bone. The fourth toe could not be adequately drilled and was simply placed in axial alignment. The skin wound was closed without drainage. A plaster-of-Paris boot was applied (Fig. 2). The patient began weight bearing in the plaster at the end of four weeks. Normal walking was permitted at the end of another month. A completely flexible and painless foot resulted.

Discussion

From a technical point of view, the open reduction offers no difficulties. All five metatarsals may be readily exposed through two appropriately placed dorsal incisions. Three metatarsals may be easily approached through a single incision, over the middle of these bones. Once the fractured ends have been cleared of the enveloping interosseous muscles, it is a relatively simple matter to drill holes in two bone ends, so that the line of suture obliquely crosses the fracture line. This is sufficient firmly to approximate the fractured bone. In transverse fractures, this alone suffices. In oblique fractures, the suture may be passed circumfertially about the shaft to prevent any angulation. The method has proven especially valuable in institutions where the facilities for skeletal traction are not readily available. The procedure is gratifying to the patient, in that it minimizes hospital stay and in the absence of infection assures a painless weight bearing foot.

FIG. 2.—The same fracture after open reduction.

In a broad sense, the plane of contact of the metatarsal heads with the weight bearing surface, forms what dentists might call an occlusal plane. Though this cannot be considered as a joint from an anatomical point of view, it forms a very definite functional articulation. In this regard, it merits all the consideration which is given to other articular fractures. Open reduction to secure accurate alignment of the surfaces is strictly indicated in articular fractures. Similarly, open reduction of metatarsal fractures should be employed, unless accurate anatomical re-position can be secured by other less radical measures.

225 WEST EIGHTY-SIXTH STREET

Tuberculosis does not recognize appeasement. Only through the cooperation and alertness of all can we stop this needless sacrifice of life. Each case of tuberculosis is a result of the carelessness of another case. We have no known specific that can be used to break this vicious cycle rapidly, but our known available means, if properly used, will slowly eradicate this disease.—Alfred M. Dietrich in *Delaware State Med. Jour.*, August 1941.

REACTIONS OF CERTAIN FLIES TO COLORS

A Problem in Fly Control in Buildings

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Although no separate mechanism for color detection has been described in the insect eye beyond the theoretical use of differing retinal cells and their axons in the ommatidia of some species (1, 2), it seems from my discussion of the subject with English and American entomologists and public health workers that there is some misunderstanding and disagreement on the important reactions of certain diptera to colors. In some recent work on house flies (3, 4) I found that the response to these diptera to attracting or repelling colors was more noticeable when they had a choice between many colors before them. It has been my experience that Musca domestica and Fannia canicularis avoid a pale yellow when they have a choice of colors, but when they have no other they will put up with yellow as a color for walls, ceilings, windows, etc., in their haunts. But in the latter conditions the yellow has not so much attraction indoors as white and some other colors for congregating centers, so that normally it produces no more than the local fly population. But if there are other attractions, such as odor, these may be strong enough to overpower the unpleasantness of yellow.

Comparatively little work has been done by workers in determining flies' reactions to various colors, and such data as are available are conflicting. As Dr. B. M. Hobby of Oxford University suggested to me, some experiments with the spectrum and the different energy content of rays of various colors would seem desirable, for that sort of work has been largely with bees and ants. The use of the optometer reaction to colored stripes has shown that a color vision exists in Fannia and other insects (5), although the reflex responses of Drosophila to a striped pattern moved in front of it was due to luminosity, not color.

Dr. Bishop, of the Bureau of Entomology, U. S. Dept. of Agriculture, informed me in February, 1941, that some of his references had suggested yellow as the most attractive, others proved yellow the most repulsive, and another showed that color made no difference. More important, he thought, were factors of odor of food, feeling of warmth, or protection from wet weather in the matter of attracting flies indoors. He agreed, however, that color has some effect, and, of course, in some of the following experiments, different species of flies are involved.

Colors Attractive to House Flies

P. R. Awati (6) found that yellow had the greatest attraction for house flies, red and violet the least. Both colored lights at night and colored tanglefoot papers by day were used. O. C. Lodge (7) found that house flies showed no color preference either in the case of foods, colored lights, or colored fabrics. Other tests of his showed the sense of smell to govern more than the sense of sight. S. B. Freeborn and L. J. Berry (8) found the pale colors, including white, were distinctly more repellent to the house fly than the intermediate ones, which included aluminum, and the darkest one was obviously the most attractive. D. J. Lee (9) showed that yellow, blue, pink and green appeared to be attractive to Lucilia cuprina Wied. in Australia, a fly also widely distributed in Asia and Africa and related to the common British and U. S. green-bottle or sheep maggot fly, Lucilia sericata, Mg.

R. Newstead (10) found this fly objects to blue, pale violet, dark brown and lemon yellow distinctly, and also to a lesser degree to clear green. Azure color was much frequented, and it also exhibited a liking for rose, red, clear green and clear yellow. It also preferred light colors to dark colors. In Holland, stables and cow stalls were sometimes treated with a washing blue inside to avoid fly-trouble and a few years ago those German government stables all dark blue inside were without the usual fly trouble (11).

Colors Attractive to Mosquitoes

G. H. F. Nuttall and A. E. Shipley (12) and E. H. F. Nuttall (13) found that the common European malaria-bearing mosquito Anopheles maculipennis Mg. after counts on seventeen consecutive days of breeding specimens alighting on seventeen even-sized boxes of different color-linings, which were moved into different positions in their tent of confinement, alighted on the fabric-colors in the following order of favor: navy blue, 108; dark red, 90; brown, 81; scarlet, 50; black, 49; slate grey, 31; olive green, 24; violet, 18; leaf green, 17; blue, 14; pearl grey, 9; pale green, 4; light blue, 3; ochre, 2; white, 2; orange, 1; yellow, 0. The U. S. Army subsequently withdrew its regulation navy blue shirts and issued light ones for use in malarial districts. Mrs. Shariff (14) found during five years in South Africa that pink or yellow mosquito curtains never harbored mosquitoes in their folds, and with boxes lined with navy blue, pink, grey and yellow flannel, the interiors of the blue and grey boxes were thickly covered with mosquitoes, while but two or three were found in the pink or yellow. Miss Hoodless (15) found in Noumea, New Caledonia, that she and a friend dressed in blue and white frocks respectively were persecuted by mosquitoes, whereas a third friend in yellow escaped completely, though usually a victim to mosquitoes. These instances would suggest the reaction to color is more regular with mosquitoes than house flies.

L. M. Bertholf (16), F. E. Lutz (17), and F. E. Lutz and E. N. Grisewood (18) showed that Drosophila will respond to light with a wave-length of 257 and that the cornea of the flesh-fly Sarcophaga is quite transparent to a wavelength of 253, although as Bertholf has shown, the retina in most insects is sensitive to ultraviolet itself, and most insects are sensitive to the deeper shades of red. He also showed that a wavelength of 487 was the most efficient attraction for Drosophila, the fruit fly and 504 for Calliphora, the blue bottle blow-fly. Lutz showed that insects attracted to light seem to perceive ultraviolet better than other parts of the spectrum, but the luminosity of various parts of the spectrum appears different with different insects.

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47 WOODSORRELL ROAD

Medical Treatment under Workmen's Compensation Act

Medical treatment to an injured employee was furnished by the employer's insurance carrier, which also authorized Swedish massage and baths on the physician's advice. The masseur submitted his bill therefore to the insurance company, which refused to pay, claiming that the baths were unauthorized and the charges excessive under section 13(a) of the Workmen's Compensation Law. The company offered to arbitrate the matter under section 13-g (2), but the masseur refused, taking the stand that the provision covered medical aid only when rendered by a physician. The masseur sued the employee on the theory that the treatments were furnished at his request and upon his promise, express or implied, to pay therefor.

The New York Supreme Court, Otsego County, Sprague v. Spencer, 14 N. Y. S. 2d 673, held that the plaintiff could not recover. The duty under the statute to furnish and pay for medical treatment is exclusively upon the employer. It was immaterial whether or not plaintiff had looked solely to the insurance carrier for payment, Workmen's Compensation Law, Q 13-f. subd. 1. This provision includes physiotherapists, it is held, although only physicians are mentioned." It cannot be that the legislature intended to relieve the workman of all the consequences of industrial injury, and still compel him to assume part of the expense of medical treatment because not given by a doctor, but yet by one authorized to render it.

"The legislative purpose to the contrary is apparent from the provisions which specifically recognize physiotherapy as an approved form of treatment. Section 13-b, subd. 1 of the Workmen's Compensation Law provides that a registered physiotherapist may give treatments under the supervision of an authorized physician. Section 13-a (5) provides that no claim for physiotherapeutic procedures costing more than $25 shall be enforceable unless authorized by the employer or the Industrial Commissioner. Finally, such physiotherapeutic procedures are covered in the schedule of minimum fees prepared by the Industrial Commissioner, pursuant to section 13(a) of the law (see schedule effective May 15, 1938, "Physical therapy, inclusive of any and all modalities—$2.00").

"It follows that the plaintiff must look to the employer for payment, the insurance carrier being simply the employer's representative in discharging the duty. The result would be different if the defendant had forfeited his right to medical treatment by failing to request it and had then incurred the obligation upon his own responsibility. There is no such claim here.

"Whether the plaintiff must accede to the carrier's demand for arbitration need not be decided."

Involutional Melancholia

R. E. Hemphill, and M. Reiss, of Bristol, Eng., in an article entitled Investigations into the Significance of the Endocrines in Involutional Melancholia (*J. Ment. Sc.* 86:1065-1077 (Nov.) 1940) classify endocrine abnormalities in a systematic way to ascertain whether there is a type of involutional melancholia in which endocrine imbalance is a primary cause.

Thirty patients were classified as follows: 1, Pure hypoovarian, in whom menstrual function was disturbed or arrested, body weight was not reduced, and there were complaints of somatic symptoms such as hot flashes and giddiness; 2, hypoovarian combined with hypothyroidism with menstrual irregularities, infrequent flushings and giddiness, loss of hair, small or impalpable thyroid with symptoms of hypothyroidism and no marked reduction in weight; 3, hypoovarian combined with hyperthyroidism, similar to group one, but showing symptoms of hyperthyroidism; 4, hypoovarian combined with hypoadrenalism, with acute weight loss, sallow complexion and sometimes brown pigmentation, loss of muscular development, flabby skin with striæ, and impalpable thyroid. Patients in type one showed motor and psychic agitation and definite delusional ideas. In type two, there were motor and psychic agitation and the patients were isolated and retarded. Those in the third class gave the impression of reacting acutely to changes in environment. In group four, there was less motor agitation than in group two, the patients expressing ideas of insufficiency and ill-defined guilt and complaining of imaginary disturbances of the alimentary tract. Estrogenic hormone built up the vaginal mucous membrane, just as in subjects who were mentally normal.

Favorable results were observed with follicular hormone only in patients of the hypoovarian and of the hypoovarian combined with hyperthyroidism types. There was no response to luteal hormone in cases that did not respond to folliculin. Desoxycorticosterone acetate gave a favorable response in patients from group four. One of these gave the distinct impression that the mental condition was probably the result of failure of the corticotrophic principle in the anterior pituitary. This hormone should be tried in this type of involutional melancholia. Follicular hormone tended to aggravate the symptoms of patients in whom thyroid function was diminished.

Symposium on Internal Medicine

MEDICAL RECORD

PUBLISHED TWICE A MONTH BY

THE MEDICAL JOURNAL AND RECORD PUBLISHING CO., INC.

WEDNESDAY, FEBRUARY 4, 1942

OBSERVATIONS ON THE 1941 OUTBREAK OF POLIOMYELITIS AND ENCEPHALITIS IN THE MIDWEST

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In September, 1941, through the courtesy of Dr. Bruce Chown, superintendent of the Winnipeg Children's Hospital, and Dr. Dougald McIntyre, superintendent of the Winnipeg Isolation Hospital, I was given the opportunity of making a clinical study of the dietary background and the factor of physical overexertion in twenty-four cases of poliomyelitis and twelve cases of encephalitis. The object of this investigation was to determine the possible relationship of vitamin B deficiency to the etiology of these diseases, as per my previous hypothesis (1).

In my earlier papers on this subject, the principles underlying the question of vitamin B deficiency as a possible etiological agent were discussed, and the question of physical overexertion as a factor contributing to such deficiency was repeatedly stressed. In a subsequent paper (2) a report was made on the dietary history in fifty cases of poliomyelitis from the 1937 Toronto outbreak, and in several cases of acute encephalitis, a pronounced deficiency in vitamin B intake being noted in all cases. Clinical reports on the application of vitamin B therapy in five acute cases of poliomyelitis and four of encephalitis were also submitted, with uniformly favorable results.

Other clinicians have reported similar results in therapeutic trials of vitamin B_1 in poliomyelitis. Broekema (2a) reports seventeen severe and moderate paralytic cases in which seven were cured, six much improved, and three slightly improved. Of twelve controls, without vitamin B_1, two were cured and one slightly improved. Giamondi (2b) reports spectacular improvement in all of his eleven paralytic cases.

In the Winnipeg cases investigated the dietary habits invariably revealed a marked deficiency in vitamin B_1 intake, in that the carbohydrate content of the meals was made up exclusively or mainly of white flour bakery goods, toasted or steam-puffed cereals, boiled potatoes, white sugar, corn syrup, candy, etc., all of which are devoid of vitamin B_1. In twenty-two of the twenty-four poliomyelitis cases investigated there was a definite history of physical overexertion in the summer activities of youth—swimming, bicycling, dancing, rowing, etc. In many of these cases the onset was associated with summer camps or resorts where a full program of athletic activity was followed. In ten of the twelve cases of acute encephalitis investigated there was also a history of pronounced physical overexertion, many of the victims being farm hands who were working from early morning till late at night in the harvesting and threshing of grain, in extremely hot weather. A considerable number of the cases of both poliomyelitis and encephalitis, particularly the latter, made reference to excessive perspiration in their activities shortly prior to the onset of symptoms. Clinical notes on a few typical cases from each group follow.

Poliomyelitis Cases

CASE I.—I. C., a boy eleven years of age; onset of illness at a beach resort on July 29th. Prior to illness the patient had been in the habit of bicycling eighteen miles daily—to and from the beach, where, in addition to swimming, he played eight holes of golf twice daily. On the evening before the onset he went on a raft which he propelled by "poling" for about half a mile, after which he was "very tired".

Usual diet prior to illness.—Breakfast: Cornflakes, or some other toasted cereal, bacon and eggs, white bread toast—two or three slices with jam or marmalade, milk or cocoa, canned fruit juice. Lunch: White bread sandwiches, milk, cake, white buns. Dinner: Boiled potatoes and meat, white bread and butter, cabbage salad, watermelon. Bed-time: White bread, jam, chocolate milk. On the day before the onset the weather was very hot, and he had five drinks of pop, several chocolate bars and a popsicle.

CASE II.—D. B., a boy, ten years old; onset of illness, August 5th. During the whole month of July the patient was at a summer camp where he was in the water three to four hours daily. When not swimming he spent most of his time in rowing, football, baseball, and running races. During the interval of four days after returning home he was bicycling—often twenty miles or more daily, and was playing "cops and robbers" in the "hot sun".

Usual diet at camp prior to illness.—Breakfast: Porridge, white bread toast, jam, prunes, milk or cocoa.

Lunch: Cabbage or potato salad, white bread or hot biscuits, milk. Dinner: Meat and potatoes, cooked vegetables, white bread, milk, cake or pie. He had "cokes" and candy between meals, but seldom any fresh fruits unless his parents sent them.

CASE III.—A. J., a male, nineteen years old. His illness began Sunday, August 3rd. On the previous three days he had been working hard at haying in very hot weather. He was "perspiring constantly and drank three to four gallons of water daily". For the three days prior to the haying he went on a hitch-hiking trip to Fort William, in very hot weather and with little food. He got so hungry on one occasion that he ate nearly a dozen sugar-coated white buns.

Usual diet prior to illness.—Breakfast: Puffed wheat or cornflakes, white bread toast, coffee. Lunch: Potatoes (boiled), meat, cooked vegetables, white bread, canned fruit, tea. Dinner: Potatoes (fried); otherwise similar to lunch.

CASE IV.—D. H., a boy, 12 years old. The onset of his illness was August 3rd. He had been at a beach resort for the month of July, where he was bicycling ten to twelve miles daily and swimming twice daily. He worked hard on the day before leaving for home—cutting grass, etc. He had a headache when he arrived home, but thought he could work it off by cutting the grass at home also. The grass was very long, and the day very hot. He worked hard and perspired continuously. That night the headache became much worse. Next morning he vomited, and developed pain in his neck and shoulders.

Usual diet while at beach resort.—Breakfast: Two bowls of rice crispies, coffee, tomato juice every other day. Lunch: Salad and cold meat. Dinner: Mashed potatoes, carrots, meat stew or steak, pie or cake. Bed-time: Six slices of white bread and jam "to fill up". No milk to drink at any meal.

CASE V.—P. M., a boy, fourteen years of age. He was taken ill September 2nd at Kenora, a private resort on an isolated island. He had been swimming three or four times daily during July and most of August, as well as canoeing and paddling a good deal. During the last week of August he worked hard at gathering logs for fuel. He was stiff and sore on September 1st. The next day he was dizzy and his head felt "heavy".

Usual diet prior to illness.—Breakfast: Cream of wheat or shredded wheat, milk, white bread toast, prunes, an egg every other day, pancakes and corn syrup occasionally. Dinner: Meat and vegetables, white bread, butter and honey. Supper: White bread sandwiches. Bed-time: Cookies, cake, etc.

CASE VI.—Mrs. W. A., aged twenty-three years. She was taken ill on June 18th. She had been working hard in a garden the previous evening, setting out tomato plants before a threatened rain storm, working fast in an effort to finish before the rain came. The next morning she had headache, and pain in the neck, shoulders and arms.

Usual diet prior to illness.—Breakfast: White bread toast and tea. Lunch: Eggs, white bread, butter, and tea. Dinner: Meat, potatoes, cooked vegetables, cake or pie, stewed fruit, pancakes and corn syrup, or syrup on bread. (In this case there is residual paralysis of muscles of right arm and shoulder—suggestive of the relationship of the overfunctioning of these muscles shortly prior to illness.)

Encephalitis Cases

CASE VII.—Mrs. A. H., aged twenty-eight years. Acute onset of illness, September 5th. A day or so previously she had been helping a neighbor clean up her home after plaster repairs, scrubbing floors, etc. She was very tired that night, and felt soreness in the back next morning. Previously, in her own home, she worked hard caring for her three children, aged ten years, seven years, and eight months. After the pain developed she continued to work hard, doing a big washing on the day before coming to the hospital, although suffering and very tired.

Usual diet prior to illness.—Breakfast: She usually had little appetite for this meal. Ordinarily she had just one slice of white bread toast with jam or an egg, and two cups of coffee; very seldom any fresh fruit. Lunch: Boiled potatoes, meat, white bread and tea. Dinner: Potatoes, meat, cooked vegetables, white bread, tea, cake or pie. Bed-time: Coffee, cake or white bread sandwiches.

CASE VIII.—Mr. E. P., aged sixty-four years, unmarried. He thought his illness began early in August. He was found lying out in the field—perhaps a night or so—in a stuporous state. He had formerly owned a five acre farm and a small "shack". He lost the property on a tax sale, but was given permission to occupy the shack. At intervals he worked on neighboring farms. Prior to onset of illness he had been employed at harvesting work, stooking grain in the very hot weather, from 7 a.m. to 6 p.m. He said that he perspired very heavily, the "sweat running out like oil". He drank great quantities of water between meals, and smoked a pipe steadily, before breakfast, at noon and at night. When hungry he would "often take a pipe of tobacco instead of food".

Usual diet prior to illness.—Breakfast (prepared by himself at home): White bread, very little butter, some canned milk, eggs or bacon, two or three cups of tea; seldom any fresh fruit—an orange perhaps once a month. Lunch: Had none, but rested with the other men. Dinner (provided by employer): Meat, potatoes, cooked vegetables, white bread, pie or cake, two or three cups of black tea.

This patient reported that for a year or more previously he had had trouble with "loss of memory". When hunting for tools he could not remember what he started to look for. He could not tell a story without forgetting the sequence, and he often forgot the day of the week.

CASE IX.—Mr. W. H. M., aged twenty-two, a member of the Canadian Militia in training. His illness had its acute onset while in barracks in Winnipeg, on August 23rd. For a month or more previously he had felt "tired all the time", and frequently fell asleep in his study classes.

Usual diet in barracks for two months prior to illness.—Breakfast: Porridge, white bread toast, jam, bacon, eggs "once a week", prunes, tea or coffee. Dinner: Meat, potatoes, cooked vegetables, white bread and tea, bread pudding "once in a while". Supper (4 p.m.): Cold meat, potatoes, white bread, jam, tea, sometimes raw apples ("often green"). Lunch (8 p.m.): White bread and cheese, "bully beef" and tea. He drank no milk except what little he got in his tea. He had three to five "cokes" and several candy bars between meals.

This patient reported that his mother had told him that he was "born tired"—that he had what was diagnosed as "sleeping sickness" when a few days old. At that time he "slept continuously for six weeks".

CASE X.—Mr. C. F., aged thirty-nine, married; owns and works a farm of four hundred acres. Previous to illness he had been working at harvesting, rising at 4 a.m. and working until 8 or 10 p.m. Three weeks previously he had had stomach "flu", with cramps, vomiting and diarrhea. The family of five all had it. He was then sick for five days, and had felt "tired and laggy" since.

The acute attack of encephalitis had its onset on September 10th with dizziness and headache. He took four or five aspirin tablets, but grew worse. On the following day, while working on his power binder, he became confused regarding the controls, and then decided to get medical advice. He was admitted to hospital on September 12th; a lumbar puncture was made, but reported negative. Next morning one of his eyelids became paralyzed and he was transferred to the Isolation Hospital.

Usual diet prior to illness.—Breakfast: Corn flakes or shredded wheat with milk, coffee, white bread toast, eggs or pork occasionally. Dinner: Meat, potatoes, cooked vegetables, white bread, canned fruit, cake, tea. Supper: White bread and milk.

This patient stated that three years ago he had had stomach pains and was then checked for ulcers. His appetite had not been very good since. He also stated that for years he had been subject to sleepy spells following eating or reading. In 1929 he had the "flu", at which time he was very drowsy. He then slept continuously for seventy-two hours.

CASE XI.—Miss K. S., a Toronto resident, aged twenty-one years, occupied as a nurse in training. She developed symptoms of encephalitis on September 5th, no known contact with any other case. For some time previously she had been working very hard at her studies and hospital duties. For months prior to the acute onset she had complained of being very tired, and when off duty for a few hours would frequently fall exhausted on her bed and go to sleep, often not awakening in time for her meals. She had been subject to frequent headache and backache for the past year or more. In April last she had an attack of stomach "flu", and had severe headache at that time. Her classmates reported that in April and May last she had noticeable lapses of memory. In July, while on holidays, her eyes became very sensitive to light and she had frequent headaches. Just prior to the acute onset she had worked unusually hard in moving to a new room in the nurses' dormitory.

Usual diet prior to illness.—Breakfast: Fresh rolls, corn flakes or puffed wheat, eggs, prunes, tomato juice twice a week or orange juice once a week. Dinner: Soup, meat, potatoes, cooked vegetables, caramel or corn-starch pudding, apple pie once a week. This meal was frequently missed, owing to oversleeping during time off duty. Supper: The patient's appetite was so poor she often had soup and bread only for this meal.

After two weeks of severe illness, with constant headache, eye signs, stupor or delirium, this patient died on September 20th.

CASE XII.—Mr. T. B., aged forty-three years, married. The acute illness had its onset on September 3rd. He went to bed the night before apparently well, but when his wife called him in the morning he did not feel like getting up. He had a heavy feeling in his head and was drowsy. For three weeks previously he had been working at threshing, pitching stooks on wagons, from 7 a.m. to 8 p.m. The weather was very hot and he was "sweating awful heavy". He drank great quantities of water, but his mouth would "glue up" with thirst at times. At night he would sleep in the barn on top of the grain with his clothing spread out as a mattress. He was such a restless sleeper that by morning he would often find himself almost covered with grain.

Usual diet prior to illness.—Breakfast: Porridge, white bread—three slices, two cups of strong coffee. Lunch: Coffee or tea—two cups, white bread sandwiches. Dinner: Meat and potatoes, some cooked vegetables at times, white bread, coffee or tea—two cups. No milk, fresh fruits or green vegetables at any meal.

This patient stated that for the past ten years or more he had been subject to drowsiness and had trouble with his eyes. When he would read for a short time the words would tend to run together. For this reason he seldom read a paper or book. He had apparently suffered from nystagmus or diplopia for years.

Note.—In five other cases of encephalitis the patients, all males, were interviewed at Winnipeg. All were found to be exclusive users of white bread and other devitaminized carbohydrates, and all gave a history of physical overexertion shortly prior to onset of illness. Three were working as farm hands in harvesting from early morning till late at night. The fourth was a welder, on a night shift, working under very high temperature, and not sleeping well in the daytime. The fifth was a Pullman car porter on a twenty-four-hour run. The weather was extremely hot and he got very little sleep for weeks. All of these five patients reported perspiring profusely.

Discussion

From the foregoing case notes it will be seen that all the subjects had been on a diet obviously deficient in vitamin B_1 and subject to pronounced physical overexertion for some time prior to the acute onset of disease. In most of the poliomyelitis cases the overexertion took the form of the usual summer activities associated with school holidays, beach resorts, etc., in which swimming and bathing occupied a prominent part. In most of the encephalitis cases the extra physical effort was associated with the harvesting of crops in the open fields under the direct heat of the sun, and this may account for the higher age (average 40.9 years) and the more predominant male-sex incidence (eighty-five percent). In poliomyelitis the critical age incidence is usually five to ten years, and the male-sex predominance about sixty percent.

The higher male incidence and the factor of overexertion in both these diseases is strongly suggestive of etiological influence of vitamin B deficiency, since the increased metabolic rate associated with both conditions is known to increase proportionately the vitamin B demand. The same conditions prevail in beriberi, which has its greatest incidence in infants and young adult males, and is frequently precipitated in borderline cases by heavy exercise as in forced marches.

It has been often noted that the muscles most in use prior to the onset of poliomyelitis are most prone to

suffer residual paralysis. This is strikingly illustrated in Case VI reported above. This, perhaps, explains why leg paralysis predominates in the human, while in the experimental disease in the monkey the arms are more frequently affected. Schumann, the great musician, is reported to have devised an exercising apparatus which he applied to his fingers with the object of strengthening them for piano practice. Its use precipitated paralysis instead. A similar motor selectivity in beriberi has been reported by Platt and Lu (3); subjects of the disease who use their legs more being more prone to leg paralysis, and those using their arms predominantly being more subject to arm paralysis. The characteristic aphonia of infantile beriberi may be similarly explained, by the use of the larynx in crying. Incidentally, there was reported a case of poliomyelitis in a young infant, in the Toronto district during the 1937 outbreak, in which the predominant paralysis was laryngeal, manifested by aphonia as the initial symptom.

De Rudder and Petersen (4) have recently reported a local outbreak of poliomyelitis in a group of school boys thirteen to nineteen years of age, shortly following a two-day athletic meet. Five paralytic and eight abortive cases developed among the participants, although nonparticipants from the same school, equally exposed and of more susceptible age, were not affected. Prior and subsequent to this outbreak the town in which these boys lived was free from the disease.

More recently Levinson and Sabin (5) have reported that monkeys with experimental poliomyelitis, when subjected to forced exercise or submersion in cool water, or both, develop more severe paralysis than otherwise.

Last summer, at the Canadian National Exhibition, two girls participating in a typewriting marathon developed arm paralysis. If the same girls had suffered similar paralysis following rowing or paddling at a summer resort they would most likely have been quarantined for poliomyelitis.

Guerrant and Dutcher (6) have made the interesting observation that growing rats, on a vitamin B deficient diet, will perform more voluntary exercise in wheel-revolving cages than controls on a vitamin B sufficient diet. When B_1 avitaminosis becomes pronounced there is then a rapid drop in voluntary exercise until the onset of paralysis. Such a vicious circle may explain the high-tension overactivity of some children in their summer play, and the predisposition of such children to poliomyelitis.

In all these correlated observations regarding the age and sex incidence, the factor of overexertion, and exposure to cold as in swimming, the element of increased carbohydrate metabolism is seen as determining a proportionate increase in vitamin B_1 demand and predisposing to deficiency and paralysis. A physiological explanation is thus provided for these parallel and hitherto inexplicable phenomena in poliomyelitis, encephalitis and beriberi.

Another striking feature of these case reports is the frequent reference to profuse perspiration, particularly by the victims of encephalitis who had been working at harvesting in the hot weather. The rapid interchange of body fluids, due to the heavy drinking of liquids to compensate for perspiration losses, would tend rapidly to dilute the tissue storage of the water-soluble vitamins, B_1 and C, the depletion of which might conceivably predispose to poliomyelitic or encephalitic involvement, similar to and parallel with the action of chloride depletion in heat prostration. Borson (7) has pointed out that vitamin B_1 is a nonthreshold substance and that diuresis may wash out a considerable amount, thus contributing to deficiency. Diaphoresis would obviously have a like effect. This correlation of sweating and encephalitis may furnish a clue to the explanation of the term "sweating sickness" which was applied in England in the sixteenth century to what is thought to have been an outbreak of encephalitis.

Mills and Colvin (8) have recently shown that the depressing effect of tropical heat can be overcome by doubling the daily intake of vitamin B_1, and have pointed out the further important bearing of their findings upon temperate zone industrial workers under conditions of severe heat. Mills (9) further states that the vitamin B_1 requirement of laboratory animals, per gram of food, has been found to be twice as much at 91 degrees as at 65 degrees F.

While considering the relationship of hot weather it may be of interest to note that during the past summer the average temperatures throughout the Midwest (Manitoba, Saskatchewan, Minnesota and North Dakota) for the months of June, July and August have been considerably above the normal, and the relative humidity has also been consistently above normal. The month of August, 1937, when Toronto's outbreak of poliomyelitis reached its peak, was also a record breaker for heat and humidity. July this year in all Midwest districts, was the hottest month; but the peak of the twin outbreaks was not reached until about the middle of August. On the assumption of the possible etiological relationship of vitamin B deficiency, this lag would be quite in harmony with the time usually required to effect tissue depletion and develop paralytic symptoms.

The seasonal incidence of beriberi provides a parallel in this respect. In Japan beriberi usually reaches its peak of incidence in August. The monthly incidence in the Japanese army in Tokio in 1879 was as follows: January, 60; February, 44; March, 51; April, 84; May, 154; June, 262; July, 644; August, 806; September 637; October, 160; November, 58; December, 36.

In the accompanying tables the day-by-day incidence of encephalitis and poliomyelitis in the Province of Manitoba and the State of Minnesota for the 1941 season is given, from which it will be seen that both diseases were running fairly "neck and neck", or should we say "head and neck"? This observation alone is very suggestive of the operation of some etiological factor common to both diseases. From these tables it will also be seen that the peak of incidence of encephalitis was reached in Minnesota on August 10th, whereas the peak in Manitoba was not reached until August 18th. There was a similar difference in the encephalitis peaks in North Dakota and Saskatchewan. This difference of a week or more would be quite consonant with the difference in the mean heat levels as related to latitude.

It is interesting to note that a similar correlation of seasonal incidence and latitude, and of overexertion and exposure to heat as precipitating factors, has been recognized in the Japanese encephalitis outbreaks. Naka et al. (9a) refer to physical exertion in the hot sun as the immediate cause of attack in seventy-four

percent of their cases. They report that in the Prefecture of Okayama, in the ten years, 1924 to 1933, the highest incidence was in 1924, 1926, 1927, 1929, and 1932, the years of greatest heat. If July is very hot, the peak of the outbreak is reached in August in the southwest provinces, gradually extending to the northeast districts where the peak is always in September. They further state that it has not been possible to prove

DAY	MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER	
	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.
1	-	-	-	-	8	-	15	7	2	7	1	-
2	-	-	-	-	2	-	9	4	6	5	2	-
3	-	-	-	-	1	-	15	5	11	2	2	-
4	-	-	-	-	1	-	15	2	4	2	2	-
5	-	-	-	-	2	-	14	6	5	1	2	-
6	-	-	-	-	8	-	25	5	2	2	5	-
7	-	-	-	-	2	-	20	5	1	1	-	-
8	-	1	-	-	4	-	27	9	8	4	1	-
9	1	-	-	-	2	-	28	6	6	-	1	1
10	-	-	-	-	4	-	28	12	4	-	2	-
11	-	-	-	-	1	-	24	10	5	1	-	-
12	-	-	-	-	5	-	38	6	4	1	-	-
13	-	-	-	-	5	-	18	14	6	-	-	-
14	-	-	-	-	8	-	25	15	1	-	-	-
15	1	-	-	-	7	-	25	27	4	2	-	-
16	-	-	-	-	15	-	27	29	2	8	1	-
17	-	-	-	-	7	-	19	29	6	1	-	-
18	-	-	-	-	7	1	14	38	4	-	-	-
19	-	-	-	-	8	-	28	27	5	2	-	-
20	-	-	-	-	6	-	14	26	-	-	-	-
21	-	-	1	-	12	-	18	26	1	1	-	-
22	-	-	-	-	8	-	10	15	1	-	-	-
23	-	-	-	-	4	2	21	20	2	1	-	-
24	-	-	-	-	17	-	15	11	1	-	-	-
25	-	-	-	-	18	1	15	17	2	-	-	-
26	-	-	-	-	10	-	17	14	2	-	-	-
27	-	-	2	-	14	-	15	12	2	-	-	-
28	-	-	-	-	14	2	22	9	-	-	-	-
29	-	-	1	-	15	1	8	5	-	-	-	-
30	-	-	-	-	5	1	12	4	2	-	-	-
31	-	-	-	-	27	1	17	1	-	-	-	-
Totals	2	1	4	-	226	9	590	414	97	54	17	1

FIG. 1.—Day-by-day incidence of poliomyelitis and encephalitis in the Province of Manitoba, Canada, in 1941. Total number of poliomyelitis cases, 938. Total number of encephalitis cases, 459. The figures in this table were supplied through the courtesy of Dr. Maxwell Bowman, epidemiologist of the Department of Health, Province of Manitoba.

transmission from one province to another, but that instead, the outbreaks appear to be dependent, at least in time, on season and climate. This relative difference in seasonal incidence in southern and northern Japan would be quite comparable to the difference, as noted above, in the peaks of incidence in the American midwest states and the corresponding Canadian provinces, between which the average difference in latitude is about six degrees, whereas in Japan it is about fourteen degrees.

A further significant feature of the Winnipeg case reports is the frequent history of premonitory signs, such as lassitude, headache, drowsiness, visual disturbances and mental aberration, for weeks, months and even years prior to the acute onset. This is strongly suggestive of the cumulative action of causal elements, which, under the effect of convergent precipitating factors, finally culminates in the frank disease. This is not consistent with the conventional concept of acute invasion by contagion, but is quite harmonious with my hypothesis of vitamin B deficiency as an etiological agent.

It would thus seem conceivably possible that in poliomyelitis and encephalitis we may in reality be dealing with different manifestations of the same basic pathological mechanism, one involving the spinal or lower neuron and the other involving the cerebral or upper neuron. The histopathology of both diseases is similar: chromatolysis, tigrolysis, pyknosis, vacuolation, neuronophagia, ecchymosis, edema lymphocytic infiltration and gliosis are descriptive terms which may be used interchangeably regarding either. Furthermore, all these terms are equally applicable to the pathology of beriberi, the classic vitamin B deficiency disease. Mathews (10) has called attention to the very close similarity of the neuropathological changes in poliomyelitis and those produced by lack of vitamin B_1. He suggests that the destructive changes in this disease may be brought about in an indirect way by the intracellular vitamin B depleting effect of an infectious agent. A parallel is found in beriberi in which the onset of paralytic symptoms is frequently reported as being precipitated by infectious processes. In Brazil, beriberi is so frequently associated with a preliminary febrile condition, of an influenza-like nature, that clinicians in that country still regard the disease as essentially infectious.

A correlated study of the relation of vitamin B_1 to carbohydrate metabolism suggests the possible key to the common pathological mechanism in these degenerative diseases. Peters (11) has shown that vitamin B_1 acts as a catalyst in the oxidative removal of certain carbohydrate metabolites, notably lactic and pyruvic acids, and that the accumulation of the latter in the B_1 hypovitaminotic tissues reduces oxygen uptake, thus impeding tissue respiration. Gerard (12) has shown that the rate of tissue respiration in the central nervous system is about thirty times that of other body tissues, thus suggesting an explanation for the neurotropic action of vitamin B_1 deficiency. Rosenbohm (13) has shown that an accumulation of 30 mg. of lactic acid per 100 grams of brain tissue can initiate nerve cell proteolysis. This mechanism may explain the etiologic sequence of destructive changes in beriberi, poliomyelitis and encephalitis, and perhaps other degenerative diseases of the nervous system, and may account for the specific nerve protective action of the vitamin.

The recent establishment of the B_1 avitaminotic etiology of Wernicke's disease, a form of hemorrhagic polioencephalitis occurring in alcoholism, after sun-

DAY	MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER	
	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.	POLIO	ENC.
1	-	-	-	-	-	-	3	59	4	14	7	3
2	-	-	-	-	-	2	1	25	7	13	3	1
3	-	-	-	-	2	-	5	41	7	15	5	2
4	-	-	-	-	1	-	-	29	9	10	4	-
5	-	-	-	1	-	3	6	87	10	18	3	-
6	-	-	-	-	-	1	5	56	10	9	2	1
7	-	-	-	-	2	4	6	45	-	9	7	1
8	-	-	-	-	1	4	5	44	10	5	7	1
9	-	-	-	-	1	1	2	68	7	7	1	3
10	-	-	2	-	1	2	1	71	6	6	7	2
11	-	-	-	-	2	4	5	48	10	8	4	-
12	-	-	-	-	1	5	5	48	5	9	2	-
13	-	-	-	-	1	4	4	41	7	4	-	-
14	-	-	1	-	1	5	7	52	6	2	2	2
15	-	1	-	1	1	15	8	55	7	-	4	-
16	-	-	-	-	-	5	6	43	10	10	2	3
17	-	-	-	-	-	9	2	57	5	9	6	1
18	-	-	2	-	-	11	3	29	6	5	5	2
19	-	-	1	-	-	7	3	39	6	5	2	1
20	1	-	-	1	-	19	5	42	4	7	-	-
21	-	-	-	-	2	14	5	26	3	1	5	1
22	-	-	-	-	2	9	2	51	5	5	1	-
23	-	-	1	1	1	11	9	56	4	2	1	-
24	1	-	-	1	1	18	5	22	9	5	3	1
25	-	-	1	2	-	14	6	10	2	2	1	-
26	-	-	2	1	6	22	8	28	2	1	-	1
27	-	-	-	-	-	11	4	18	7	4	-	1
28	-	-	2	1	1	9	9	16	-	3	-	1
29	2	-	-	-	1	17	5	18	9	2	-	-
30	-	-	1	-	3	14	10	21	4	1	-	-
31	1	-	-	-	-	14	7	6	-	-	-	-
Unknown	-	-	-	6	1	52	4	92	4	13	2	5
Totals	5	1	13	15	52	284	152	1190	185	201	84	55

FIG. 2.—Day-by-day incidence of poliomyelitis and encephalitis in the State of Minnesota, in 1941. Total number of poliomyelitis cases, 471 (May 1st to October 28th, inclusive). Total number of encephalitis cases, 1724 (May 1st to October 28th, inclusive). The figures in this table were supplied through the courtesy of Dr. O. McDaniel, Minnesota Department of Health, Division of Preventable Diseases.

stroke, and after infectious fevers, lends further support to the author's hypothesis of B_1 avitaminosis in the etiology of poliomyelitis and encephalitis. Alexander (14) has experimentally produced this disease in

pigeons with significant regularity when they are fed on a diet deficient in vitamin B_1, but sufficient in other vitamins. He found that large doses of vitamins B_1 and C effected cures in a number of his cases. The hemorrhagic feature of the disease may be due to vitamin C deficiency.

Another recent development has been the discovery of the B_1 avitaminotic etiology of an encephalomyelitis occurring in foxes (Chastek paralysis) in Minnesota. Green, Carlson, and Evans (15) have proved this disease to be caused by vitamin B_1 deficiency as a result of the feeding of fresh fish. By adding vitamin B_1 to the diet they were able to prevent the disease, and to effect cures, even in advanced stages, by large parenteral doses of the vitamin. Pathologically, they found the disease to be analogous to Wernicke's encephalitis in man.

From these observations it seems quite possible that the encephalomyelitis of horses, which has been thought to be related to human encephalitis, and supposedly transmissible by mosquitoes, may also be found to be a vitamin B deficiency disease. The fact that these diseases did not make their appearance in the Midwest in epidemic proportion until after the drought of 1933 may not be without significance. (The first recorded epidemic of human encephalitis occurred in Austria during the food deprivations of the Great War in 1917.) Following the drought years, which came close on the heels of financial depression, many of the Midwest farmers were forced to use more of their land for wheat and less for feed-grain, with the result that their live-stock became more dependent on the forage and roughage of pasture land. Such a diet, while perhaps abundant in vitamins A and C, would be deficient in vitamin B_1, which is found in highest proportion in the ripened grain. An official in the Department of Agriculture, Diseases of Animals Branch, Ottawa, has informed me that the horses most affected with encephalomyelitis are those that have been in pasture for some time. In the years 1935 and 1937, when this disease was most prevalent, there was abundant rainfall and plenty of pasture, which would harmonize with the deficiency theory. The fact that the incidence of the disease is higher in rural districts than in city-maintained animals is also suggestively significant—the city horses would likely get a higher grain ration.

Following the work of Flexner and Lewis (1909) in America, and Landsteiner and Levaditi in Europe, involving the experimental transmission of poliomyelitis from the human to the monkey by intracerebral inoculation, the theory of the filtrable viruses was evolved. This has led to much ineffectual research on the question of the "portal of entry", immunology, prophylaxis and therapy, based on the assumption of the etiological relationship of some ultramicroscopic living organism. Convalescent serum, nasal sprays and quarantine have had no demonstrable effects. The newer theory of the virus, as a protein chemical molecule, of measured size—ten millimicrons—having catalytic action in the nervous system and thus being capable of reproducing similar disease conditions in experimental animals, calls for a revision of our interpretation of the Flexner experiments. The recent work of Twort (16), Brown and Kolmer (17), Vinson and Petre (18), Stanley (19), and Howitt (20), gives support to this new concept, which harmonizes with the vitamin deficiency hypothesis and would account for the failure of conventional control measures. Paul (21), in discussing environmental factors in poliomyelitis, says: "There is apparently some important factor which causes this disease to flourish in the country in the summer. This rural factor or factors must be almost as fundamental, from the viewpoint of etiology, as is the virus itself, and has thus far received insufficient emphasis. Thus, it is not believed that poliomyelitis is a contact disease *per se*, but that the proper environmental setting is more important for the spread of the disease than is the mere presence of the virus among a group of susceptible children."

In the foregoing paragraphs I have endeavored to show that various conditions increasing vitamin B demand and thus contributing to deficiency, such as age and sex, summer heat and humidity, perspiration, heat loss in swimming, overexertion in summer activities at beach resorts and summer camps, acute infections, etc., superimposed upon a suboptimal vitamin B status, may provide just such "environmental setting". According to my viewpoint the virus itself may be nothing more or less than a biochemical by-product of vitamin B deficiency, and poliomyelitis and encephalitis fulminant forms of beriberi. The recent work of Pinkerton and Swank (22) in recovering from experimentally B_1 avitaminotic pigeons a virus identical with that of psittacosis, capable of reproducing the disease in healthy birds, gives additional support to this theory. The work of Sabin and Duffy (23), in which laboratory animals deficient in vitamin B_1 were found to be much more susceptible to encephalitis by injection of vesicular stomatitia virus than were normal controls, also provides contributory support to my hypothesis.

Not so long ago, beriberi and pellagra were regarded as infectious diseases, the former being thought to be referable to a microörganism found in rice and the latter to a fungus found in corn. While these diseases were so regarded the mortality rate was very high, in pellagra as high as fifty-seven percent; but since they have been found to be deficiency diseases the mortality, under corrective treatment, has been reduced to almost nil.

It may not be merely coincidental that the first reported outbreak of poliomyelitis occurred in Germany in 1840—barely a year following the adoption of the steel-roller method of white-flour milling in Vienna. This patented method of flour milling was not generally used in Western Europe and America until near the end of the century. In 1890 the Swedish outbreaks of poliomyelitis were reported, and following this perennial outbreaks have occurred in England, France and America. I venture to forecast that with the general adoption of the flour-enrichment program and the addition of vitamin B_1 to refined carbohydrates a commensurate reduction in the incidence of poliomyelitis and encephalitis, as well as other degenerative diseases of the nervous system, will in due course be manifested.

Summary

Observations were made in Winnipeg hospitals relative to the dietary background and the factor of physical overexertion in twenty-four cases of poliomyelitis and twelve cases of encephalitis from this year's twin outbreaks. Clinical notes on a number of cases from each group are submitted.

All cases investigated were found to be on a very low level of vitamin B intake, and in nearly all there was

definite evidence of physical overactivity prior to the onset of disease. In many of the cases there was evidence of premonitory signs of the disease for weeks, months and years previous to the acute attack, indicating the operation of some cumulative factor or borderline condition which finally culminates in the frank disease. This finding would not harmonize with the conventional concept of contagion, but would be consistent with the writer's deficiency theory.

Correlated observations relative to age, sex and seasonal incidence of poliomyelitis and encephalitis, in support of the writer's hypothesis of the etiological relationship of vitamin B deficiency, are discussed, also the possible nutritional basis of equine encephalomyelitis.

The new theory of the chemical nature of the viruses is cited in support of the deficiency hypothesis and in explanation of the failure of conventional control measures.

The laboratory determination of the vitamin B status of subjects of these diseases, and the clinical trial of vitamin B therapy in the acute and convalescent stages, offers a wide field for further research.

I hope to be able shortly to report the results of an attempt to transmit beriberi in monkeys by intracerebral and nasal inoculation, as a step toward clarification of this problem. In the meantime, since there is no satisfactory therapy for either poliomyelitis or encephalitis, and since vitamin B_1 deficiency is so generally prevalent, I suggest that children, during the summer holidays, and industrial workers in high temperatures, be given double the usual requirement of this vitamin as a possible prophylactic.

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16 Gothic Avenue

A STUDY OF THE CHRONIC EFFECT OF ALCOHOL ON LONGEVITY, METABOLIC RATE, WEIGHT AND THE CIRCULATORY SYSTEM

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Because alcohol accounts for a great share of crimes and suicides, contributes to diseases, deaths, poverty, vulgar depravity, sexual excesses, venereal diseases, mental disorders, and dissolution of families, its effects are important. The continued use of excessive amounts of alcohol over a long period of time produces certain characteristics, physical and mental, best grouped under the heading of chronic deterioration (1). In chronic alcoholism there is an ethical degeneration, impairment of the memory, and diminished will power.

In all age groups for men, the incidence of smoking is higher than drinking. While more men smoke than drink, at least as many women drink as smoke. Of both men and women, forty-three percent use tobacco, and forty-four percent use alcohol (2).

According to the various authorities alcohol is not

a stimulant even in small doses, but in all amounts it has a narcotic action, affecting all tissues, especially those of the central nervous system where the action is due to inhibition of the higher centers. It lessens physical strength, causes loss of judgment, impairs mental processes, and interferes with memory and emotional stability.

Alcohol increases the budget of the Massachusetts State Department of Mental Health by ten percent (3). The great majority of persons who develop alcoholic mental diseases are average citizens who showed no marked abnormality prior to the formation of the alcoholic habit (4). Emotional immaturity is a frequent cause of alcoholism (5), for it is an easy escape mechanism which is readily available and toward which society is tolerant (6). Alcohol addiction may be a symptom of a mental disease or it may exaggerate a latent epilepsy or mania (7), but in itself, it causes from five to ten percent of all mental cases (8). Abnormal drinking is definitely greater among epileptics in families with a psychopathic heredity. There is an acceleration of epileptic seizures in genuine epileptics through the use of alcohol, and alcohol may precipitate latent epilepsy (9). Echeverria found that in five hundred cases, one hundred resulted from alcoholic excess; and that in one hundred and eighty-nine cases, drinking exaggerated the epilepsy (10).

Alcohol contributes to at least one of every five fatal automobile accidents, drinking pedestrians included. Thirty percent of the pedestrians in fatal accidents are under the influence of alcohol, since the decreased inhibitions of the drunken pedestrian, his impaired reaction and slow response to stimuli tend to create a disregard for safety and traffic regulations (11).

The effect of alcohol upon the electroencephalogram has been shown to be a reduction in energy at relatively low blood alcohol concentration. The performance in psychometric tests, such as addition of consecutive digits, reversed clock problems and strength of grip, is definitely impaired. The motor chronaxy is shortened in the excitory stage of intoxication (12).

In countries where the alcohol consumption is highest the rejections of recruits is much higher (13). During the first four years of the war in a neurological and a general army hospital, over one-third of the admissions were primarily or secondarily on account of alcoholism (14).

Alcoholism assists in the development of tuberculosis indirectly through its association with poverty and directly through liver damage resulting in malnutrition and metabolic disturbances (15). Alcoholic intoxication destroys resistance to pneumococcal infection since even in highly immune animals the bacteria grow inhibited by the body defences during alcoholic intoxication (16). Soldiers from the alcoholic regions of France showed a higher mortality in the influenza epidemics since 1918 than those from other regions.

Alcohol causes ninety percent of pellagra because it is a source of vitamin free calories; it lessens the appetite and gastrointestinal function, and produces hepatic damage with consequent vitamin deficiencies (17).

Ingestion over a period of years causes a diminution in the volume of gastric juice secreted and also a diminution in the acidity (18). The liver is the chief tissue where the oxidation of alcohol takes place, so that exercise does not increase the oxidation of alcohol to any extent (19). There is a definite relation between alcoholism and cirrhosis of the liver (20). Fatty infiltration of the liver decreases hepatic function and since the liver is the only tissue which oxidizes significant amounts of alcohol, this results in a decrease in the rate of alcohol oxidation (21). Only one-tenth of the alcohol imbibed is excreted by the lungs and kidneys, while the rest is oxidized in the body or accumulated in the brain and spinal fluid (23).

Polyneuropathy, which is a degenerative process occurring in chronic alcoholics, is produced by the toxic effects of alcohol and its associated vitamin deficiency. While alcohol is not the only cause of polyneuropathy, similar conditions being caused experimentally by vitamin B deficient diets, the vitamin deficiency in alcoholics is further aggravated by the resulting gastric and hepatic conditions which create a food intolerance as well as deficiencies in absorption and assimilation (23). Alcoholic gastritis and hypochlorhydria prevent vitamin absorption and liver insufficiency does not permit storage and utilization of vitamin B by the liver (24). The deficiency of vitamin B in chronic alcoholism assists in producing polyneuritis, liver degeneration, endocrine gland lesions and cardiac accidents (25). Women, while forming less than twenty percent of the alcoholic population, are predominant among patients with alcoholic neuropathy (26), especially those which have had prolonged anorexia and gastrohepatic intolerance (27). Endocrine symptoms and progressive anorexia depend on nutritive troubles produced by a gastric mucous membrane atrophied by constant contact with alcohol (28), producing hypochlorhydria or achlorhydria (29). Thyroid insufficiency is often indicated by dry-infiltrated skin and occasionally amenorrhea may precede the syndrome of polyneuropathy.

Among the more acute alcoholic conditions is the Wernicke syndrome which consists of cloudiness of consciousness, varying ophthalmoplegia and ataxia due to acute hemorrhagic polioencephalitis (30). A residual Korsakoff syndrome is frequent in those who recover or pass this stage. Korsakoff psychosis (31), decribed in 1887 by the Russian psychiatrist, is practically always present in the alcoholic form of polyneuropathy and occurs in one to two percent of all chronic alcoholics (32). This syndrome shows anterograde amnesia, impaired learning ability, disorientation in space and time, confabulation, sterotypy of speech, aphasia and agraphia, an indifferent or euphoric mood and occasionally illusions (33).

To show the chronic effects of alcohol on the average individual, an unselected series of patients encountered in routine practice was studied. The patients were separated into two groups for comparison: users and nonusers of alcohol, those who used alcohol in any amount being classified as users.

The statistical significance of the results was determined by the use of the accompanying formula.

To determine the effect of alcohol on growth and weight, an unselected series of 1800 consecutive patients, weighed and measured for basal metabolic rate, was prepared. The female group consisted of 1039 nonalcoholics and 293 alcoholics, their average weight being respectively, 149.6 ± 27.15 and 141.4 ± 27.7 pounds. The "d" was found to be 8.2, the "K", 4.91, and the "p," seven in ten thousand.

Among the 468 men, there were 300 who used alcohol. In comparing the average weight of alcoholics, 152.5±23.15, and the average weight of nonalcoholics, 161.1±28.15, the difference was found to be 8.6 pounds. This made the "k" 3.38 and the "p" seven in ten thousand. Thus, in male and female groups, it was found that the average weight of those using alcohol was lower.

Formula

$$d=(s-y) \qquad SEd=\sqrt{\frac{SD^2}{N}-\frac{SD^2}{N}}$$

$$SEx^2=\frac{SD^2}{N} \qquad k=\frac{d}{SE_d}$$

$$SEy^2=\frac{SD^2}{N}$$

p=area in tail beyond k

Area of curve segment having same sign as K

[1]The symbols used are: "d," difference; "x" and "y," means of the two groups; "SE," standard error; "SD," standard deviation; "N," number of cases; "k," relative deviate of the measure which is normally distributed; "p," probability of the "k" magnitude being exceeded solely through random sampling.

In the same groups, the metabolic rate figured as follows: women users showed an average of .05 percent±11.75, while the nonuser's rate was 3.75 percent±14.3; the difference then, was 3.7 percent. These figures resulted in a "k" of 3.67 and a "p" of two in ten thousand. The men's difference of seven was a little more marked—the alcoholic rate being –5 percent ± and the nonalcoholic rate being +2 per cent ±12.7. The "k" was 2.39, and the "p," one hundred and sixty-eight in ten thousand.

Blood pressure observations were made on ten thousand consecutive office patients. There were 5098 nonusers and 4902 users of alcohol. The average systolic blood pressure for 1337 women alcoholics was found to be 138.±22.0 and for 4473 women alcoholics, 135.6±32.0; the resulting "d" was 2.4, the "k," 3.15, and the "p" was sixteen in ten thousand. For the men alcoholics the systolic pressure was 136.9±22.5, and for the nonalcoholics, 131.7±25.7; the "d," 5.2, the "k," 6.6; the "p" was one in a million.

In comparison of the diastolic blood pressures, we found that they were correspondingly raised by the use of alcohol. Alcoholics had a difference of 2.18 in that direction. The women alcoholics averaged 85.73± 13.0, the nonalcoholics, 83.55±11.0, the difference being 2.18. With the men, it was nearly the same, the average pressure for them being respectively, 85.4±10.8, and 83.6±13.0. The figures for the men were "d," 1.8; "k," 3.60, and the "p" was one in a million. Corresponding figures for the women were: "d," 2.18; "k," 5.57, and "p," one in a million.

A comparison of the respective pulse rates of 84.49± 10.4 and 84.74±12.7 revealed a difference of 2.5, a "k" of 1.08, and a "p" of .2801. This demonstrates that alcoholics have an increased pulse rate.

Of the three thousand electrocardiographic patients, 1878 were nonusers of alcohol. Their cardiac rates compared respectively: 75.4±12.6 and 77.6±10.68, which figures resulted in a difference of 2.2 and a "k" of 5.2; the "p" was one in a million. The RT waves of users and nonusers of alcohol measured .262 seconds and .210 seconds respectively, the "d" being .013 and the "k," 75. The "p" was one in a million. This shows that the difference in the cardiac rate largely occurs in the RT interval.

A study of the electrocardiograms revealed that 28.1 percent of those showing no abnormality used alcohol, while a little larger group, 31.1 percent, of abnormal electrocardiograms were those of alcohol users. This shows that alcohol is a factor in cardiac abnormality. That this difference between the proportions is significant is proved by the formula: the standard error of the difference of the percentages equals the square root of "p" multiplied by "q" multiplied by $\left(\frac{1}{N^2}+\frac{1}{N^2}\right)$. Since the actual difference between the two proportions (31.1 percent–28.1=3.0 percent) is 3.75 times the standard error of the difference, there are two chances in ten thousand that the difference is a chance difference due to sampling.

An analysis was made of the average age of eight thousand deaths after the age of forty occurring in families of office patients. In comparing the nonalcoholics having an average of 69.02±12.7 with the alcoholics whose average was 67.33±14.4, the difference was found to be 1.69 years. The "k" was 4.9, and the "p" was one in a million. A comparison of the two groups will show that after the age of forty, the users of alcohol have less mean expectation of life than the nonusers.

Conclusions

The continued use of alcohol by the average individual lessens the length of life, the metabolic rate and weight. It increases the pulse rate and systolic and diastolic blood pressures and produces a tendency to cardiac disease.

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PITFALLS IN ABDOMINAL DIAGNOSIS*

Medical Aspect

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Abdominal diagnoses must be made in large part on clinical grounds. Laboratory aid is not always available; there is sometimes not time to wait for reports and these reports are not always absolutely pathognomonic. We have all seen the acute gangrenous appendix with a normal blood count. For this reason accurate history taking and complete physical examination is one of the first essential requisites for good abdominal diagnosis. The question at issue in any acute abdominal condition must always be "Is surgical intervention necessary? If so, is it imperative?"

For purposes of convenience I have divided the subject into the following groups.

I. Abdominal symptoms occurring during the course of a general disease.

II. Abdominal symptoms secondary to lesions in the cardiovascular system.

III. Abdominal symptoms with pulmonary disease.

IV. Miscellaneous group with lesions in the nervous system and female genital tract.

I. General Conditions

(a) In the course of all general infections with accompanying bacteriemia, one is likely to encounter abdominal symptoms which are not always easy of diagnosis. Many of these symptoms are due to enlargement of the spleen due to the septic condition, and are characterized by more or less sharp pain in the left hypochondrium or left iliac fossa. With the addition of nausea, vomiting and fever, a differential diagnosis between the general condition and a localized suppurative intraabdominal process is necessary. Subphrenic abscess on the left side may be suspected, but the absence of any plausible etiological factor should be sufficient to rule out such a suspicion. Intraabdominal collections of pus during a general infection are uncommon, as bacteria filtered from the blood stream are invariably caught in the kidney or lungs. Degenerative processes in the liver during the course of any general infection sometimes cause jaundice, and in such a symptom complex the differential diagnosis between an impacted common duct stone without pain comes into being. The presence of bacteria in the blood culture which here is necessary and essential clears up our doubts.

(b) *Rheumatic fever.*—One of the less common modes of onset of this disease is with severe generalized abdominal pain, not at all unlike the onset of an attack of acute appendicitis. I cannot illustrate this condition better than by citing a recent case in my own experience.

I was called to see a girl of twelve who a few hours before had been taken with severe generalized abdominal pain and vomiting. The temperature and white blood count were elevated and the diagnosis was acute perforated appendicitis with peritonitis. In taking the history I learned that the acute illness had been preceded by a sore throat and nose bleed and that the

*Read before a general meeting of the Harlem Medical Association, Wednesday, January 7, 1942.

abdominal cramps had come on over a period of three or four hours with increasing severity. In making my physical examination I noticed that both ankles were extremely tender when I attempted to elicit the Kernig sign. On direct pressure they were also tender and the child withdrew her legs when any attempt was made to touch her ankles. The temperature—104.4°—seemed to me to be too high for an inflamed appendix of so short duration. The abdomen was rigid and tender, but there was no sign of free fluid. I asked that operation be deferred and the child watched for rheumatic fever. The next day the ankles were red and swollen. Soon, other joints became involved—pericarditis ensued, and the patient ran the course of a severe attack of rheumatic fever.

Many of these cases have now been reported in the literature. They are most common in young children—especially girls—and we must be on the watch for this error lest we become party to an unnecessary and perhaps fatal laparotomy.

(c) *Urticaria.*—In 1894 Osler reported a series of cases of visceral crises of the erythema group. This series has been added to since that time, and in 1938 I reported six cases in which operation had been erroneously performed with the idea that a surgical abdominal condition was at fault. The appendix is the organ that usually takes the blame for this rather innocuous condition. The true nature of the trouble first comes to light with the appearance of the skin lesions. In women twisted ovarian cysts are often suspected, when in reality urticarial lesions of the gastrointestinal tract are the real offenders. Renal calculi have been diagnosed due to the presence of blood in the urine. A history of preexisting asthma, urticaria or eczema must always lead one to suspect this condition when an acute abdominal syndrome is encountered. The physical examination should always include careful inspection of the skin for the presence of rashes. This is particularly true in children who are prone to this condition. When one realizes that visceral urticaria is easily terminated by adrenalin and a cathartic, as opposed to a surgical operation, one can easily realize the importance of this error in diagnosis.

(d) *Syphilis.*—This most protean of all diseases naturally must show itself in the abdomen as well as in the rest of the body. The gastric crises of tabes have often been mistaken for organic abdominal disease. The mere testing of knee jerks and papillary reflexes are of prime importance in this instance.

Lues of the stomach, while uncommon, simulates carcinoma so closely that only the positive serological reaction and the characteristic x ray findings serve to distinguish them.

Aneurysm of the abdominal aorta by pressure on adjacent organs can simulate any type of intraabdominal neoplasm, especially retroperitoneal collections of glands due to lymphosarcoma or Hodgkin's disease. Again, serological findings and careful palpation for expansile, not transmitted pulsation, will help. Recent advances in x ray technique by the use of diodrast are of inestimable help. Fortunately most abdominal masses do not call for immediate operative interference, so time can be taken for accurate and careful diagnosis.

(e) Generalized arterial disease, as evidenced in such conditions as lupus erythematosus and periarteritis nodosa, sometimes begins with abdominal cramps, often diagnosed as chronic appendicitis. These conditions are all characterized by degenerative, necrotizing arterial lesions leading not only to narrowing but to spasms of the abdominal vessels. These spasms cause cramp-like pains. In the course of the general physical examination, an eyeground examination is most useful when these conditions are suspected.

(f) Hodgkin's disease, leucemia, lymphoblastoma and lymphosarcoma are all capable of producing large, intraabdominal glandular masses and enlargement of the spleen. Acute and subacute intestinal symptoms may supervene at any time. If the ensuing obstruction is not complete, so that surgical intervention becomes necessary, x ray therapy, of course, produces the necessary palliative effect. Here, again, diagnostic acumen is necessary and shows itself in the search for other enlarged glands. Blood examinations and biopsy of superficial glands come to our aid in this dilemma. In children celiac disease may cause a similar set of symptoms. Gastrointestinal and vaginal bleeding in hemophilia, acute leucemia and thrombocytopenic purpura are not rare. Of course, the presence of any severe anemia necessitates blood examination which will put us on the proper track. The history of bleeding from any other part of the body in addition to bleeding from the body orifices should immediately excite the suspicion of a blood dyscrasia.

II. Cardiovascular System

(a) *Coronary artery disease.*—In narrowing of the coronary vessels, either with coronary insufficiency or actual thromboses, the anginal syndrome may be initiated with epigastric or right hypochondriac, rather than precordial pain. Even the radiation may be quite typical of gallbladder disease or that of a gastric ulcer. In a recent coronary occlusion the collapse symptoms with the subsequent drop in blood pressure may serve to focus attention on the heart. It must be remembered that severe coronary artery disease and even an occlusion can exist with negative electrocardiographic findings. Positive evidence of a closure is sometimes delayed several days in appearance. This differential diagnosis is one of the most difficult and important in medicine and is made, in most instances, only by a series of observations over a period of days. Careful blood pressure readings and pulse observations often point the way to the right road. While it is true that nitroglycerine relieves gallbladder spasm in some instances, its dramatic effect in the relief of pain caused by coronary spasm can be used as a therapeutic test. Where the condition of the patient warrants it, x ray examination of the gallbladder and gastrointestinal tract are of course important. The coexistence of coronary artery disease and cholelithiasis is not uncommon especially in women so that the pitfall becomes more difficult to avoid.

(b) *Mesenteric emboli* and mycotic aneurysm of the mesenteric blood vessels. In mitral stenosis with auricular fibrillation, embolization is a common accident. This is also the case in subacute bacterial endocarditis. The spleen, kidneys and mesenteric vessels are favorite sites. When the mesenteric vessels are involved in this process the symptoms are comparable to the collapse and hemorrhage produced by any type of intestinal bleeding or obstruction, as, for instance, hemorrhage from ulcers, neoplasms, intussusception or volvulus.

The correct diagnosis of the underlying condition prevents embarrassing errors.

(c) *Pericarditis.*—This condition, either rheumatic or tuberculous, at times gives only severe sharp epigastric pain, radiating through to the back. Particularly may this be true at its onset. Gastric ulcer, pancreatitis and cholelithiasis have been suspected, when the symptoms were due to an acute pericarditis.

(d) The cramp-like pains of intraabdominal vascular disease, due to ordinary arteriosclerosis, are easily confused with conditions in the gastrointestinal tract especially with spastic colitis. The status of the rest of the arterial system makes one suspect that the lesion is in the blood vessels and not in the intestine.

III. Pulmonary System

(a) The onset of pulmonary tuberculosis is often accompanied by severe nausea, anorexia, diarrhea or constipation. Particularly are gastric symptoms in the foreground. These may be so prominent as to make one suspect an ulcer or a chronic gastritis. In young adults, any prolonged duration of gastric symptoms should occasion a suspicion of pulmonary tuberculosis. Temperature observations over a period of time and frequent chest examinations together with x rays may be necessary before the lungs are excluded as the focus of infection.

(b) *Lobar pneumonia.*—I feel certain that quite a few appendices have been removed from patients in whom the signs of consolidation in the right lower lobe were not yet apparent. The coexisting diaphragmatic pleurisy and spasm are transmitted to the abdominal muscles, giving rise to pain, tenderness and rigidity in the right iliac fossa. A short period of observation, perhaps only an hour or two, will generally suffice to direct one's attention to the chest. Here the laboratory offers us little aid, but the mode of onset, the behavior of the temperature curve and the pulse rate, are of inestimable value. Involvement of the pleura alone in a dry pleuritis often presents the same stumbling block.

(c) Perforation of a lung abscess of either lower lobe into the pleural cavity generally gives rise to severe spasm of the upper abdominal muscles. The collapse symptoms ensuing after such an accident, fit in quite well with the diagnosis of acute pancreatitis. The difference in location of the pathological process is all the difference between life and death—the chest location requiring immediate interference—the abdominal, a "hands off" attitude. Here the antecedent history as to the preexistence of chest or abdominal complaints plays an important rôle.

IV. Abdominal Medical Conditions

(a) The presence of jaundice with fever and without pain always brings up the question of hepatitis as against lesions in the biliary tract or pancreas. So important is this question that in hospitals all jaundice cases, except those immediately operative, are admitted to medical wards. The danger lies in inadvertently and unnecessarily operating upon a patient suffering from a simple hepatitis. Gallbladder x ray is precluded by the presence of the jaundice, and a flat plate of the abdomen often gives little help. On the other hand, a common duct stone should be speedily removed to prevent onset of severe infection, and subsequent irreparable damage to the liver. Neoplasms in the biliary tract and in the pancreas must be considered. The question at stake is always—operate or wait? Which? The absence of a palpable gallbladder, the smooth, tender, enlarged liver, the continuing temperature, generally without chills, the severe nausea, vomiting, anorexia and apathy, and fluctuations in the jaundice, as evidenced by inspection and icteric index determinations, all point to the diagnosis of hepatitis. Liver function tests are notoriously unreliable, but in most instances the ingestion of a suitable amount of galactose and its recovery in the urine over a period of hours can be used to measure liver damage. Normal liver cells should be able to convert galactose into glucose and store glycogen. In degenerated cells this property is lost or reduced and the galactose is recovered in abnormally large amounts in the urine. It is safest to collect the urine for five hours and to take two to three grams as the normal excretion after the ingestion of forty grams. The short description of this bugbear does not make it much simpler, and I am certain that each of us will sooner or later be guilty of operating an inflammatory condition of the liver.

Stomach.—Recent advances in gastroscopy by Schindler and others have brought to our attention the presence of acute and chronic gastritis. Even with x ray examinations, these conditions are not always easily separated from a true ulcer and the perfection of gastroscopy seem to be our best hope.

Intestinal tract.—Diarrhea, especially when long standing, is a problem of no small importance. Its presence in neoplasms is well known. X ray of the gastrointestinal tract is one of the most accurate diagnostic procedures at our disposal, but in any case of diarrhea three simple procedures are often overlooked, namely: 1, the examination of the gastric contents for anacidity; 2, the careful inspection of the anus and lower rectum for small ulcerated or infected areas and the examination of the stool for worms. Any of these findings may clear up a case that had previously been x rayed and remained a puzzle.

The hypogastric mass has often proved a pitfall to many of us. A simple full bladder must always be excluded in this situation and no diagnosis of a mass in the hypogastrium should be attempted until one is certain that the bladder is empty. The cause of the urinary retention, if that be the case, can be determined later.

Miscellaneous Conditions

(a) Root pains caused by spinal cord conditions or by pressure of osteophytes in the spine may radiate to the upper or lower abdomen and simulate cholecystitis or appendicitis. The absence of fever and the elicitation of pain by spinal pressure are helpful.

(b) Herpes zoster of the ileoinguinal nerve is easily mistaken for an acute appendicitis if the vesicles are not yet present. A little time may clear up this enigma.

(c) In young women unruptured graafian follicles have been repeatedly mistaken for appendicitis—especially an appendix located in the pelvis. The proximity to a menstrual period and the lack of muscular rigidity should put us on our guard.

I have presented these few danger signals in the hope that we might avoid these pitfalls. The errors enumerated are costly to the patient and embarrassing to the physician, as can be attested to by the author.

941 PARK AVENUE

HORMONES AND VITAMINS IN RELATION TO THE EYE*

Oculofacial Physiognomy and Personality in Relation to the Endocrines

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The evolution of medical thought in its broadest aspects, as opposed to purely diagnostic and therapeutic activities, is marked very strikingly in its preoccupation with the riddle of personality and the changing theories as to the makeup of "the noblest study of mankind." As mentioned in the introductory chapters of this survey, medicine in its classical infancy associated character with personality and ascribed the combination to elements, body "essences", or planetary influence and directing dominance. Men were jovial, mercurial, martial, and so on. Less definitely applied, these appellations have lingered on in poetry and rhetoric. The humours, supposedly originating in such disparate organs as lymph-glands, the liver, or the heart, determined by their dominance whether men were choleric, sanguine, lymphatic, cordial, or atrabilious.

With the advent of cellular pathology all these ideas were thrown into the discard, together with phrenology which had its brief day in an attempt to detect and locate personality in what came to be vulgarly known as bumps, i. e., more or less imaginary local prominences of the cranial vault to each of which was ascribed, without any justification or basis in actual observation or even topographical anatomical probability, a definite quality, such as combativeness, philoprogenitiveness (sic), acquisitiveness, memory, and so on. Little attention, if any, was given to the facial skeleton although, as may appear further on, it is closely associated in development and physiognomic significance with the skull, *sensu strictiori*. These philosophical and metaphysical thinkers, these pedants who studied(?) life by introspection, theorizing, analogy, logic and reference to authorities of the same ilk, instinctively if not intentionally avoided any checkup by observation, any recognition of factual evidence. Even they could not help noting some features of expression, structure, gait, or other habit which was of significance for personality.

The pundits of the new, the cellular, pathology, threw out the baby with the bath when they consigned the entire theoretical system of the essences, of idiosyncrasies, dyscrasia, to an oblivion which they firmly believed to be deserved and fondly hoped to be lasting. With it, of course, went all ideas of associating character or personality in any of its forms, structural, functional, emotional or intellectual—possibly even nosological—with secretions as opposed to cells. It is to what Lumière has well termed the renaissance of humoral pathology that we owe, as an interesting by-product of practical significance, a wealth of studies of body build, mental tendencies, emotional coloring, vocational aptitudes in relation to the glands of internal secretion.

The categories and types set up to distinguish mankind are many. A racial (?) yard-stick opposed Nordic to Mediterranean-Alpine stocks. Its basis was not only shaky but narrow, taking into account, as it did, only some—not all—European peoples, to the very striking exclusion of about four-fifths of the population of the earth and, of course, all reference to African, Asiatic, Polynesian, or Amerind. A division according to predominant body form or rather mass distribution, gave the antithesis of pyknic, stout-short, and asthenic, slender; of leptosome, slight, and bradysome, massive. Weininger made it a matter of sex, and distinguished two types, the predominantly virile, arrhenoplasmic, and the female, thelyoplasmic. Owen Meredith went even further. He claimed that there were only two kinds of humans, those who turn red with intense emotion, anger, hate, and those who turn pale. This purely "literary" analysis (?) might be termed a triumph of understatement or, again, of oversimplification, in neither case very satisfactory to a student of the natural sciences.

But sex characteristics alone, virility or femininity *per se*, are, when it comes to personality, only the half of it. And the Viennese author himself called attention to the fact that the plasma was by no means invariably male or female exclusively, there were no one hundred percent males, however apparently two fisted or hemanly, no one hundred percent females, however womanly. It is interesting to note that modern endocrinology has salvaged part of the Weininger theory in essence if not in detail and attributes an important rôle to gonadotropic and estrogenic hormones circulating in either sex or—*nota bene*—the intermediate (Robert Frank). We might speak of arrhenhormone and thelyhormone and accept them as factors in intellectual and emotional tendencies, vocational choice in business, industry, the arts and sciences and professions, in such basic characteristics as courage, tenacity, concentration, persistence, on the one hand, and love, pity, tenderness, and other supposedly feminine traits, on the other.

We finally come to a theory which considers facial topography and dividing it by horizontal lines into the three areas of brow, nose-cheeks, and mouth-chin, distinguishes according to their predominance, between intellectual, respiratory, and intestinal types. Draper has carried this idea out into the three panels of personality, structure, function and intellect, and Berman, at long last, has envisaged the endocrines as the glands of personality. However, in all this valuable spade-work, remarkably little has been said or written about the face and the eye as indicative, by way of physiognomy, of personality and character. The present writer has collected a lot of evidence and is firmly convinced that these two features not only in more or less static form and structure but in function, and the fleeting alteration which activity in that mobile area of the human body brings about in significant spatial relations are of great, if not determining, significance in the interpretation of the make up of the individual. Facial form and topography, eye form, spacing, and gaze are, he believes, definitely indicative of personality and character.

667 Madison Avenue

*Eighteenth article in the series.

LEGAL ASPECTS OF CORONARY ARTERY DISEASE

ARTHUR J. BROTHERS
New York, N. Y.

Many attorneys pay too little attention to the medical aspects of a case. Often they defer discussion with the physician until his arrival in court, and my own colleagues must take much of the blame when there has been insufficient cooperation. On the other hand, some physicians do not appreciate the difficulties that confront the lawyer in searching for objective evidence that the physician in the first instance should have obtained and preserved. This is particularly true of litigations involving coronary artery disease.

Between 1920 and 1930 there were sold in this country a very large number of insurance policies containing disability clauses. As that generation of policyholders grows older and more susceptible to illness and disease, it now, in increasing numbers, looks to these policies for protection. The most common type of claim involves coronary artery disease.

The policies almost always provide that the disability must be both total and permanent. Many insurance companies at first, interpreted this as meaning that an insured must be so invalided or diseased as to virtually necessitate confinement to bed. They had not conceived of the ordinary case of thrombosis where the patient later becomes ambulatory, but cannot work without serious risk. This was brought out in a legislative investigation held some years ago when the companies produced legal opinions from their own attorneys placing a literal interpretation on the term "permanent and total disability." The courts, however, disagree with this interpretation and hold that it is sufficient to show that work would prove seriously harmful.

Accordingly, coronary artery disease is now a recognized form of policy disability. Many companies, however, insist that the electrocardiogram must show substantial damage to the heart muscle. In my own experience I have found that where inverted Ts and depressed ST segments appear in the electrocardiogram, the claim may be honored without litigation. But, if these abnormalities are not clearly evident, then the claim is likely to be contested.

The trouble with this rule of thumb is that many patients who have had a thrombosis may fail to show substantial abnormalities in the electrocardiogram, since this is not an infallible index. Furthermore, it is a common occurrence that abnormalities which are present shortly after the event, may disappear from later electrocardiograms. In such cases the companies may honor the claim at the outset and subsequently, on the basis of less abnormal electrocardiograms, insist that there has been a sufficient improvement to warrant a return to work.

In representing such claimants, an attorney is usually confronted with two problems. He must first prove that there has been a thrombosis and next that the patient cannot or must not return to work. It often happens that a physician was not consulted at the time of the thrombosis and when he does enter the case, the evidence of the event is no longer fresh and clear. The attorney may also find that a physician was promptly consulted but did not realize the need of obtaining and preserving objective evidence of the heart injury. In either of these cases, the assembling of the evidence may become a difficult, if not impossible task.

For these reasons I urge the physician to inquire whether the patient carries this type of disability insurance, and, if so, to take precautionary measures for securing and preserving the evidence that will later be required. Electrocardiograms should be taken five days, and again ten days, after the event, as these are the ones most likely to show changes. The patient's temperature should be taken daily and recorded because an elevation in the temperature may be significant. Sedimentation tests should also be made, as here again an elevation in the rate may be significant. Blood pressure changes should be recorded and there should of course be the usual procedure of x ray and fluoroscopy. In taking the history, particular attention should be paid to the patient's description of the anginal pains and their duration.

If the physician is not consulted at an early stage and if the objective evidence of the injury is no longer fresh, then other means of detection should be employed, such as the kymograph. This technique recently had its origin in Germany and is not widely used here. An x ray machine is regulated to take a number of successive exposures upon a single plate. A grid moves vertically in front of the patient's chest as these exposures are taken. This grid consists of black strips alternating with white strips, the black strips preventing light infiltration. In this way the movement of the walls of the heart are photographed and a normal heart movement will appear on the film by a series of lateral prongs. Where there is an area of infarction, some of these lateral prongs may be shortened or even entirely absent, indicating a reduction in the movement of the heart wall. The kymograph is generally taken in several positions and may conclusively prove a heart injury as well as its precise location. This type of evidence is invaluable because juries often discount opinions of physicians unless supported by objective evidence. I know of nothing more convincing than a photographic plate.

Sometimes even the kymograph proves disappointing. The combination of negative electrocardiogram and negative kymograph should not end the search for objective evidence. The next procedure is the exercise tolerance test. In this test, as you know, four successive electrocardiograms are generally taken. The first of these is while the patient is at rest. The next follows immediately after exercise. The next, ten minutes later, and the last, another ten minutes later. The infarction may often be identified in the first electrocardiogram taken after exercise. It takes the form of an inverted T in the fourth lead which gradually disappears in the later pictures.

About ten years ago Wood and Wolforth conducted a series of experiments, using one hundred control subjects; fifty of these were in normal health and fifty were known to have heart injuries. Under exercise tolerance it was found that some of the ill group showed no abnormalities, while some of the normal

group did show abnormalities. But whenever the abnormality consisted of the inverted T in the fourth lead, the subject invariably belonged to the heart disease group. None of the normal group showed this particular type of abnormality, yet it was fairly common among the other group. I recommend the exercise tolerance test only as a last resort, because it involves a physical risk to the patient. The short trot is insufficient. A leading cardiologist tells me that he walks the patient upstairs for about four flights. He accompanies him of course, and stops the test if the patient finds the going too difficult.

After the infarction is established by any of the methods already mentioned, the attorney must next go on to prove that the disease is totally disabling. In the courts of Manhattan, this term is taken literally and it means that the patient must be disabled from performing any work, sedentary or otherwise. One case holds that if he can perform the duties of a desk receptionist, no matter how unsuited he may be to such work, he is not totally disabled. That, however, is not true in the Brooklyn courts or of the courts of most other jurisdictions. There, the question is whether the patient is disabled from performing the particular type of work for which he is suited and trained. But, as I have already said, if he lives in Manhattan, he must meet the more exacting rule.

A few years ago coronary artery disease was considered an early death sentence which would be further accelerated by work or effort. The physician in those days usually took for granted that the case was hopeless and advised the patient to lead a quiet, subdued form of existence. It was found that many patients who conformed to this routine surprised their physicians by living far longer than was expected, and some even lasted beyond the normal life span. This caused certain cardiologists to go to the other extreme, to minimize the effect of the disease and to return to routine work, persons who better belonged at home. There is a middle ground between the overpessimistic and the overoptimistic cardiologist and I believe that sound medical opinion fits within this. This middle ground calls for a study of the patient's reaction to physical activity; permits him as much activity as he can comfortably absorb but keeps him at home if the warning pains return after little effort. Any type of work, even that of the desk receptionist, involves routine attendance, assumption of certain responsibilities, and the stimulation and nervous excitement that accompanies any occupation. Of course, if the patient becomes too distressed and unhappy through inactivity, then work of some character may prove the lesser evil. There are some cases where the patient prefers to risk a shorter life for a more active one. That choice I should think, belongs to the patient.

If the patient insists that the warning pains return on slight effort, he should be believed. I mention this because there is a tendency among some cardiologists to attribute the pains to hypochondria, when, as commonly occurs, the objective evidence disappears. Collateral circulation may compensate to some extent, but, in the final analysis, this can only be measured by the patient's reaction to effort.

Each case presents an individual problem and cannot be settled by any broad general rule. The physician by careful watch, should determine the boundary of effort that may be safely approached, and the patient kept well within that boundary. If a return to routine work does not fall within this boundary, then the patient should be kept at home and there should be no compunction in classifying him as disabled from work.

11 Broadway

THE PRIEST'S WATER CURE

THE HONOURABLE WILLIAM RENWICK RIDDELL
Toronto, Canada

In the latter part of the last century, a Catholic priest, Father Kneipp, acquired considerable fame by his water cure. Living in the small Bavarian village of Wörishofen, his clinic was visited by men of all ranks, from Baron de Rothschild to the poor man, who could pay only a dollar for two weeks' treatment. A white-haired old man of imposing figure, with a powerful face to which specially dark eyebrows gave peculiar character, there seemed something positively majestic about him—or this may have been the effect on patients from his successful treatment of their afflictions.

His remedy—he had only one upon which he relied, though he occasionally administered vegetable preparations—was water, pure water, generally cold, and used for hardening and bracing the system. His methods in this view were varied. They may be systematized as follows: 1. Walking barefoot either in wet grass, on wet stones, in fresh-fallen snow or in cold water. 2. Foot baths and arm baths. 3. Knee affusions with or without the accompaniment of upper and lower affusions.

The simplest and most natural practice, he considered to be walking barefoot in wet grass, whether the moisture be produced by dew, rain or artificial means. This should not be kept up more than one to three quarters of an hour. The shoes and stockings should be kept dry, and put on the wet feet—nothing but hands and face should ever be dried. Those afflicted with cold feet, throat affections, catarrhs, headaches and congestions should walk on wet stones for three to fifteen minutes. Walking barefoot in new fallen snow was considered an admirable cure for certain troubles. For example, a woman troubled with chilblains, which used to suppurate and cause much pain, was soon cured of her troublesome complaint by this method; while a young girl complaining of a violent toothache ran out into the garden in the snow barefoot and came back in ten minutes with her toothache completely gone.

Walking in water up to the knees is of great influence in curing cases of disease having their seat in the bowels, bladder or kidneys. The weak may employ warm water, but for those who can stand it, the colder the better—one minute to begin with, then extending gradually to five or six minutes. The knee treatment is more elaborate. A tub of water is provided. The patient bares his legs to his knees, and sitting on a chair, puts his feet into the tub. Then water is poured on his knees—two to ten watering cans being employed. This is followed by upper effusion. The patient stripped to

the waist, and protecting his lower parts with a towel or sheet wound around him, placing his hands in a tub of water, water is poured on his back from a can. Then the chest is rubbed dry, the body left wet, and dry clothes put on. Sometimes the knees are affused instead of the back, and sometimes, indeed, the whole body from throat to point of the toes receives the stream. Water should not be drunk in great quantities, a little before, none during meals. "Drink thou as often as thou art thirsty, and never drink to excess" is the maxim (1).

Notes

1. Most of this material I have taken from an octavo, *"My Water Cure*; as tested through more than thirty years, and described for the healing of diseases and the preservation of health. By Sebastian Kneipp, Parish Priest of Wörishoffen (Bavaria). With illustrations. Translated from the Thirtieth German Edition by A. de F.: Edinburgh & London: William Blackwood and Sons, MDCCCXCI."

But in the late nineties, I met in Paris an enthusiastic admirer of the Pfarrer, who told me almost incredible stories of his successful treatment of disease.

OSGOODE HALL

Recent Advances in Gynecological Endocrinology

J. P. Greenhill, of Chicago, (*Illinois M. J.* 79:61 (Jan.) 1941) says that testosterone propionate inhibits ovarian activity with the suppression of uterine bleeding and involution of the accessory organs including the breasts, uterus and vaginal mucosa. It is useful in the treatment of uterine bleeding, dysmenorrhea, painful breasts, premenstrual tension, and menopausal disturbances. Three hundred to five hundred mg. are generally required to check excessive uterine bleeding. Ninety to two hundred and fifty mg. in six divided doses during the last two weeks of the menstrual cycle generally suffice for the control of dysmenorrhea, although occasionally seventy-five to one hundred mg. must be given each week throughout the month to suppress the menses in order to alleviate the dysmenorrhea. Ten to twenty-five mg. three times a week during the third and fourth weeks of the cycle are recommended for painful breasts. Ten to twenty-five mg. three times a week during the last two weeks of the cycle relieve distressing premenstrual tension. Prolonged use of testosterone propionate in the female may produce symptoms of virilism such as hair growth, especially on upper lip and chin, lowered pitch of the voice, and slight enlargement of the clitoris. Occasionally the patient may show a gain in weight and develop acne, particularly on the forehead. These signs practically always disappear upon stopping treatment.

Thus far, the results with PMS in the gynecological disturbances for which it is recommended, functional uterine bleeding, amenorrhea, sterility and failure of ovulation, have not been very satisfactory. Results produced in experimental animals have not been duplicated in human beings.

A varying percentage of women taking stilbestrol have nausea, vomiting, abdominal distress, anorexia, diarrhea, lassitude, paresthesias, vertigo, thirst, and skin rashes. Stilbestrol, like the natural estrogens, may produce uterine bleeding in women past the menopause, but stilbestrol also, not infrequently, causes bleeding even while the drug is being administered. Until we know more about stilbestrol we should be cautious in using this drug.

The following routes of administration of hormones are mentioned: hypodermic, oral, vaginal, rectal, inunction, and pellet implantation. It is stated that numerous hormones are now being used superabundantly and unscientifically by many practitioners of medicine.

Sulfathiazole in Treatment of Gonorrhea

E. N. Cook and D. A. McCannel of the Mayo Clinic (*Proc. Staff Meet., Mayo Clin.* 16:401 (June 25) 1941) present a report of thirty-six cases of acute and chronic gonorrhea in the male and female in which sulfathiazole was given in daily doses of three to five grams (average four grams) for an average period of 8.2 days. Sulfathiazole had not been used previously in any of these cases. Three patients complained of slight anorexia, relieved by the reduction of the daily dose of sulfathiazole from five to four grams. Three or four negative cultures were obtained in twenty-nine cases. Seven patients left the clinic after the first negative culture. No recurrences were reported. Local treatment, properly given, combined with sulfathiazole, will shorten the duration of the disease. Occasionally a case is encountered in which chemotherapy is ineffective. Sulfanilamide reduces the treatment period to less than half that required for local treatment alone, and sulfapyridine brings about a cure in a shorter period, while with sulfathiazole it is even less.

Gold Therapy in Tuberculosis

F. Seligson, of Glencliff, N. H. (*Am. Rev. Tuberc.* 43:394 (March) 1941) says that in treating pulmonary tuberculosis with solganal-B oleosum, at first two small doses of 0.01 gm. weekly were given, followed by two doses each of 0.02, 0.05, 0.1 and 0.2 gm. weekly within the same period. Doses of 0.3 and 0.4 gm. were given only once a week. During menstruation no injections were given because of the physiological changes in the blood picture during this time. The last and highest dose, 0.4 gm., was repeated as often as necessary, but not to exceed the total amount of 8 and 9 gm. If needed, a second course was given and the smaller doses were administered this time only once, if, during the first treatment, the tolerance of the patient had been established.

Solganal-B oleosum is an aurothioglucose compound and is to be distinguished from sanocrysin which is an inorganic preparation. Its effect is nosotropic and not bacteriotropic. It stimulates the defensive forces of the reticuloendothelial system. Solganal-B oleosum is better tolerated than sanocrysin. Its toxicity is very low, as proved by the therapeutic index, which is 1:50 for solganal-B oleosum, compared with 1:4 for sanocrysin.

The results of the treatment have been gratifying. Even far advanced cases, particularly those of the predominantly exudative type, have answered favorably to the administration of solganal-B oleosum. Cavities and infiltrations disappeared and sputum was converted. Improvement occurred after unsuccessful attempts of treatment with bed-rest and, in some cases also, with artificial pneumothorax. Complications remained within narrow limits.

Practical Therapeutics

DILANTIN SODIUM IN THE CONTROL OF A CONVULSIVE DISORDER DURING PREGNANCY

HARRY BERGMAN
New York, N. Y.

The following case is presented because a woman who had a severe convulsive disorder was allowed to become pregnant after being controlled by dilantin sodium. She subsequently went through a moderately complicated pregnancy, difficult delivery, severe postpartum period, yet remained free of major convulsions, and had a normal child.

In view of these facts, the question has arisen whether the use of this drug may not have a place in the treatment of eclampsia for the control of the convulsions, even though this is knowingly only a symptomatic treatment, which symptom, however, has still defied most types of present day medication.

Dilantin sodium (sodium 5,5-diphenyl hydantoinate) was first called to the attention of the medical profession in 1938 by Merritt and Putnam, of Harvard Medical School, who reported excellent results in the treatment of the various types of epilepsies when this drug was used (1).

The drug is administered orally in doses of one and one-half grains in hermetically sealed capsules. It is given in dosages varying from .2 to .6 grams daily, preferably before meals. The optimum dosage must be determined by trial. Previous medications, such as bromides or phenobarbital, may be used along with dilantin sodium, and later decreased in dosage as the dilantin sodium is increased until it exercises control. In the absence of untoward reactions, the minimum effective daily dose is to be continued.

Fortunately, the toxicity of this drug is not marked. Among the toxic symptoms are dizziness, ataxia, tremors, blurring of vision, diplopia, and nausea. Cutaneous reactions, mostly morbilliform or scarlatiniform in nature, may occur. No organic changes or fatalities have been reported. A mild gingivitis may occur. In five percent of cases, serious reactions, namely, generalized dermatitis and purpura, occurred. These disappeared on withdrawing the drug.

Case Report

Mrs. T. S. B., a white female, aged twenty-seven, was first taken ill in 1936 at the age of twenty-two with what was thought to be grippe. The patient was in the hospital for one week at this time, and although discharged as cured, subsequently always felt somewhat tired.

In retrospect, it is now felt that she had a postinfluenzal encephalitis as the etiological factor of her subsequent convulsive disorder.

About June, 1936, the patient first noticed a certain amount of dizziness and a sensation as if she were floating away, especially while in a recumbent position. In August, 1936, she began to have a series of generalized convulsions which occasionally occurred during the day, but which came on mostly during the night, occurring as often as every thirty minutes and lasting ten to thirty seconds.

The spells were of two types: 1, minor, occurring every day; and 2, major, occuring about once a month. The latter did not start until the spring of 1937. The minor attacks were characterized by acute rigidity, often resulting in falling; dilatation of the pupils, waxy pallor, rapid pulse, low blood pressure, tonic and clonic spasms, U-shaped configuration of the body, and occasionally slight unconsciousness. The major spells resulted in tongue biting, etc.

A thorough neurological check-up at the Neurological Institute, Columbia Medical Center, including encephalographic studies, did not reveal any definite pathology, and the patient was discharged with the diagnosis of "convulsions of unknown origin". She was given calcium, bromides, and phenobarbital in large doses without diminishing either the number or intensity of the convulsions.

Complete endocrinological and chemical work-up revealed a basal metabolic rate of –30. All other findings were normal.

In the fall of 1937, the patient went to see Dr. I. S. Wechsler, who diagnosed the condition as an "autonomic petit-mal convulsive disorder", possibly encephalitic in origin.

It was decided then that since sedatives and other nonspecific drugs, such as organotherapeutic measures, benzedrine, etc., had not been of any avail, vasoconstrictor sympathetic drugs should be tried. Ephedrine sulphate, three-eighths grain twice a day and three-quarters grain at night, was the first drug to give the patient any relief from the tremendous number of short lasting, but violent convulsions which made sleep almost an impossibility. This was reported in 1938 (2). The diurnal attacks were relieved about 75 percent, and the nocturnal about fifty percent.

In December, 1937, the patient became pregnant, which resulted in her becoming violently ill, and a therapeutic abortion had to be performed.

The patient continued at this restricted sociological level until October, 1938, about which time Merritt and Putnam first introduced dilantin sodium. Capsules containing one and one-half grains of the drug, given three times a day were first tried, and the response to this treatment was so remarkable that all previous medication was discontinued. It was found that one and one-half grains five times a day almost completely stopped all convulsions.

Thorough laboratory and physical examinations did not reveal any deterrent effects of the drug, and the

patient was again able to return to work, and to a normal social life. The only toxic effect noticed was a slight swelling of the gums of the lower jaw which diminished under large doses of natural and synthetic vitamin C, as was first noticed by Kimball (3).

Because of her apparent normal condition, the question of pregnancy was again broached by the patient, and after consultation among her various physicians, it was decided that this would be allowable.

In September, 1939, the patient became pregnant. The only complications during this pregnancy were an attack of generalized furunculosis, and a swelling of both legs which made locomotion somewhat painful and difficult.

Because she stated that some of the dizziness and minor attacks were returning, the dosage of the dilantin sodium was increased to one and one-half grains six times a day. Continued laboratory and physical check-ups showed the patient's general condition and her pregnancy to be normal.

The patient was delivered on June 27, 1940, after a difficult labor, due to the fact that the fetus was in a persistent right occipitoposterior position, and the membranes had ruptured four days prior to the onset of labor. No attacks occurred during three days of very severe pain. Manual rotation of the fetal head, cervical incisions (Duhrssen's incisions), high forceps and manual removal of the placenta were performed during the labor, and the patient went into profound shock, necessitating blood transfusions, etc. Her recovery was slow because of an associated sepsis, for which she received sulfanilamide.

During this time she received seven and one-half grains of dilantin sodium daily, and only about a dozen seizures occurred in three weeks, despite high temperatures, etc. No spells of unconsciousness occurred during this time, and since returning home she has had no seizures.

The child was a living female weighing seven pounds eleven ounces at birth. Examination showed her to be normal in every respect, and she progressed normally after birth.[1]

Discussion

This patient presented a convulsive disorder of unknown origin which was of such a nature that pregnancy made her convulsions worse, and a therapeutic abortion had to be performed. Following the use of dilantin sodium, the patient was able to go through a full term pregnancy and to have a normal child.

In view of the fact that eclampsia is also a convulsive disorder of unknown origin, the thought presents itself that this drug may have some effect in controlling the convulsions, which in themselves may prove fatal. What effect the drug may have on the "condition" itself cannot be stated at this time, although its toxic effects are not marked. It was noticed that dilantin sodium did not increase the toxicity of sulfanilamide.

The most accurate method of administration is the oral route, although, should the patient be in coma, rectal administration by inserting several capsules in a milk mixture high into the rectosigmoid has been advised (4). It cannot be given intramuscularly or intravenously.

[1]Dr. Samuel S. Rosenfeld delivered the child.

Summary

1. A case manifesting an unusual convulsive disorder is presented.
2. This patient, whose first pregnancy had to terminate in a therapeutic abortion, had a normal child while taking dilantin sodium.
3. The properties of dilantin sodium are briefly discussed.
4. It is suggested that dilantin sodium may be of use in controlling the convulsive state of eclampsia.

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1171 WALTON AVENUE

The author is indebted to Dr. Israel Wechsler for his assistance in the preparation of this paper.

News Items

Physicians and the Present Emergency.—At a meeting of the New York Physicians Forum for the Study of Medical Care, held at the New York Academy of Medicine on Monday evening, January 19th, the duties of the physician in the present emergency were discussed by Dr. Condict W. Cutler, Jr., chief of Emergency Medical Service for Manhattan, and Dr. H. van Zile Hyde, Medical Officer, Second Civilian Defense Area.

Society for Education in Heredity and Eugenics.—The next meeting of this society will be held at the Squibb Building, New York, on Friday evening, February 6th. The following program will be presented: Science and the war, by Waldemar Kemphert; Gregor Mendel, by Dr. Philip Reichert; Heredity, diabetes and its complications, by Dr. Benjamin Jablons.

Paul Schilder Memorial Meeting.—The Society for Psychotherapy and Psychopathology held its annual Paul Schilder Memorial Meeting on Thursday evening, January 22d, at Bellevue Hospital, New York. The program included the following papers: Mannerisms as Organic motility syndrome (paracortical disturbances), with moving pictures, by Dr. Lauretta Bender; Paul Schilder: An evaluation of his life's work, by Dr. Heinz Hartmann.

Kings County Medical Society.—At a recent meeting of the Section of Physical Therapy of the Kings County Medical Society, the following officers were elected for the year, 1942: President, Dr. Jacob Gutman; vice-president, Dr. Harold Reifeld; secretary-treasurer, Dr. Samuel A. Warshaw; executive board, Dr. John J. Hauff, Dr. H. Tevel Zankel, and Dr. Jerome Weiss. Meetings are held at the County Society Building, 1313 Bedford Avenue, Brooklyn, on the second Thursday of the month.

Lectures to the Laity.—The next lecture in the seventh series of Lectures to the Laity at the New York Academy of Medicine will be presented on February 26th by Dr. Arnold Gesell, director of the Clinic of Child Development, School of Medicine, Yale University. The subject will be Creative Behavior in Child and Adult.

"Neighborhood Health" to be Discontinued.—The Department of Health announces that it will discontinue the publication of *Neighborhood Health* for an indefinite period in order to concentrate all its efforts on essential public health services during these critical times. The January, 1942, issue contains an interesting article on New York City's Nutrition Program, by Dr. John L. Rice, Commissioner of Health, New York City.

American Pharmaceutical Association.—The Northern New Jersey Branch of the American Pharmaceutical Association acted as host to the physicians of Northern New Jersey at a meeting held at the Academy of Medicine, Newark, New Jersey, on Thursday evening, January 29th. Dr. Richard A. Deno, head of the Department of Biological Sciences at Rutgers University College of Pharmacy, discussed The Pharmacology of the Sulfonamides.

Friday Afternoon Lectures.—The eleventh lecture of the sixteenth series of Friday Afternoon Lectures at the New York Academy of Medicine will be delivered on February 6th by Dr. Caroline Bedell Thomas, associate in medicine, Johns Hopkins Medical School. Her subject will be Prophylactic treatment of rheumatic fever by sulfanilamide. The twelfth lecture of the series will be given on February 13th, by Dr. John H. Talbott, associate in medicine, Harvard Medical School. His subject will be the Pathogenesis, recognition and treatment of gout.

Stated Meeting of the Academy.—At a stated meeting of the New York Academy of Medicine to be held Thursday evening, February 5th, the scientific program has been prepared in conjunction with the New York Tuberculosis and Health Association. The general topic for discussion is Recent developments in the treatment of pulmonary tuberculosis. Physiological considerations will be presented by Dr. Dickinson W. Richards, Jr., associate professor of clinical medicine, College of Physicians and Surgeons, Columbia University, and Surgical treatment, by Dr. Frank B. Berry, assistant clinical professor of surgery, College of Physicians and Surgeons, Columbia University.

Joint Meeting of Heart Association and Section of Pediatrics.—A joint scientific session of the Section of Pediatrics of the New York Academy of Medicine and the New York Heart Association, Heart Committee of the New York Tuberculosis and Health Association, will be held at the Academy on Tuesday evening, February 10th. The following papers will be read: Prevention of rheumatic recurrences: a discussion of various measures now being used, by Dr. Ann G. Kuttner, medical director, Irvington House; Twenty years' observation of children with rheumatic heart disease following convalescent care, by Dr. Alexander T. Martin; Coagency in the approach to the problem of rheumatic heart disease, by Dr. Edward S. Rogers, assistant commissioner, Department of Health, State of New York. The discussion will be opened by Dr. Homer F. Swift and Dr. Katherine G. Dodge.

Dedication of Melanie Faith Polachek Cournand Memorial.—The Board of Trustees and the Medical Staff of the Hospital for Joint Diseases, New York, announces that the Melanie Faith Polachek Cournand Memorial (Professional Service Building) will be dedicated on Saturday, February 7th, with suitable ceremonies. The dedication will include the following professional departments: Henry Kaufmann Corrective Exercise Gymnasium; Max and Rosette Schwarzhaupt Department of Radiology; Leo L. Doblin Pathology Laboratory; Lester Hofheimer Physical Therapy Department and Mr. and Mrs. Samuel H. Levy Occupational Therapy Department.

New York Endocrinological Society.—At a meeting of the New York Endocrinological Society, held at the New York Academy of Medicine, on January 28th, the following papers were presented: Potassium tolerance in adrenal insufficiency, by Dr. Irwin Jaffe; Blood lipid partition in childhood hypothyroidism, by Dr. Leo S. Radwin, Dr. J. P. Michelson and Dr. Joseph Melnick; Effect of estradiol inunction and pregneninolone on the endometrium of the menopause, by Dr. Henry W. Weber; Methyl testosterone in gynecology, by Dr. Lawrence Kurzrok.

Russian Medical War Relief.—The Greater New York Physicians Committee for Russian medical war relief was organized recently to further the campaign of the Russian War Relief, Inc., for medical and surgical supplies for Russia. The officers of the committee are: Dr. Tracy J. Putnam, chairman; Dr. Eugene H. Pool, co-chairman; Dr. S. Bernard Wortis, vice-chairman; Dr. Iago Galdston, treasurer, and Dr. Eric M. Matsner, secretary. At a dinner of the Committee, which will be held at the Waldorf-Astoria, on February 13th, the chairman will be Dr. Eugene H. Pool and S. L. M. Barlow will act as toastmaster. Among the speakers will be Senator Claude Pepper of Florida, Dorothy Thompson, and Quincy Howe.

Springfield Physicians Aid Russian War Relief.—The Springfield, Mass., Committee for Russian War Relief has announced, through headquarters of Russian War Relief, Inc., 535 Fifth Avenue, New York, that Dr. Garry DeN. Hough will head a distinguished group of medical men aiding the Committee in its effort to get medical supplies to Russia. Serving with Dr. Hough are: Dr. Harold F. Buddington, Dr. William A. R. Chapin, Dr. James B. Comins, Dr. Arthur E. F. Edgelow, Dr. Frederick S. Hopkins, Dr. Edward Katz, Dr. Roswell G. Mace, Dr. O. J. Menard, Dr. Mendel Poliak, Dr. Bernard Rabinovitz, Dr. Walter W. Williams, Dr. Charles F. Lynch, Dr. Joseph F. Derby and Dr. S. Sannella.

Section of Neurology and Psychiatry.—At a meeting of the Section of Neurology and Psychiatry of the New York Academy of Medicine, to be held Tuesday evening, February 10th, Dr. Israel S. Wechsler will present cases from the service of the Mt. Sinai Hospital. Samuel P. Horton, Ph.D., will read a paper on the Aims and limitations of aptitude testing, which will be discussed by Gladys Tallman, Ph.D. and Dr. Robert B. McGraw. Dr. J. Lawrence Pool will read a paper on Classification, diagnosis and treatment of spinal arachnoiditis, which will be discussed by Dr. Lewis D. Stevenson and Dr. Clement B. Masson. There will also be an executive session. Dr. George H. Hyslop is chairman and Dr. Charles Davison is secretary.

Personal.—Dr. Theodore Rosebury, of the College of Physicians and Surgeons, Columbia University, presented a motion picture, with sound effect, on the spirocheta pallida before the Section of Dermatology and Syphilology of the New York Academy of Medicine, Tuesday evening, February 3rd.

Dr. Fred W. Rankin, Lexington, Ky., president-elect of the American Medical Association, will report on March 1st for active military duty as chief consulting surgeon to the army. Dr. Rankin will have the rank of colonel.

Dr. L. R. Thompson, assistant surgeon general of the United States Public Health Service, has been appointed chief inspecting officer and coordinator of the nation's public health workers. Dr. Thompson will supervise the activities of all public health service workers and operations of the government's marine hospitals and regional laboratories.

Discussion on the Sulfonamides.—A special meeting to discuss the sulfonamides will be held under the auspices of the New York Branch of the American Pharmaceutical Association on Monday evening, February 9th, at Columbia University College of Pharmacy, 115 West Sixty-eighth Street, New York. The meeting will be under the direction of Dr. Herman Goodman and the following papers will be presented: Pharmacology of the sulfonamides, by Dr. C. P. Wimmer; Sulfonamides in the treatment of pneumonia, by Dr. Salo N. Weber; Sulfonamides in the treatment of gonorrhea and the venereal diseases, by Dr. Adolph Jacoby, and Sulfonamides in treatment of disease of the skin, by Dr. Maurice J. Costello. An open discussion from the floor will follow. Physicians and medical students are invited to attend.

Seminar on Venereal Diseases.—The Bureau of Social Hygiene, New York City Department of Health, resumes on February 14th its Saturday morning educational conferences for the physician in practice. The theme of the seminar will be Venereal diseases for the practitioner. Conferences will be held on six consecutive Saturday mornings, through March 21st.

The program for February 14th is as follows: Facilities offered to the physician by the Bureau of Social Hygiene, by Dr. Daniel Crowley; Diagnosis of early syphilis, by Dr. Maurice Costello; Treatment of infectious gonorrhea, by Dr. Alvin C. Drummond. Cases from the Central Clinic will be presented. The lectures will be illustrated by lantern slides of manifestations of venereal diseases, and pamphlets of interest to the physician will be distributed.

For complete six-week programs write to the Bureau of Social Hygiene, Department of Health, 125 Worth Street, New York City.

Spanish Speaking Associations for Physicians.—At the annual meeting of the International Spanish Speaking Association of Physicians, Dentists and Pharmacists, held Friday evening, January 16th, the following officers were elected to serve during the year 1942: President, Dr. J. M. Gershberg, New York, N. Y.; first vice-president, Dr. Juan Sacasa, Nicaragua; second vice-president, Dr. J. R. Goodall, Montreal, Canada; third vice-president, Dr. Walter G. Crump, New York, N. Y.; general secretary, Dr. Wallace B. House, New York, N. Y.; assistant secretary, Dr. John A. Cinelli, New York, N. Y.; corresponding secretary, Dr. Pedro N. Ortiz, New York, N. Y.; recording secretary, Dr. Emilio L. Hergert, Brooklyn, N. Y., and treasurer, Dr. Stanley Eiss, New York, N. Y. At a meeting of this association to be held on February 20 a symposium on the science of medicine, surgery and dentistry in relation to war will be given. A series of films all in sound and color will be presented. At the close of the meeting a reception will be held at the home of the president, at 333 Central Park West, New York, N. Y.

Annual Dinner of Birth Control Federation.—The annual dinner of the Birth Control Federation of America, Inc., was held at the Waldorf-Astoria, on Wednesday evening, January 28th, under the auspices of the National Committee for Planned Parenthood. The dinner program consisted of a discussion of population planning as a factor in a democratic world, with Dr. Richard N. Pierson, president of the Birth Control Federation of America, Inc., presiding. The Rev. Cornelius P. Trowbridge, Church of the Redeemer, Chestnut Hill, Mass., acted as toastmaster. Other speakers included: Julian Huxley, scientist and author; Jay Allen, foreign correspondent; Alan Valentine, president, University of Rochester. Citations for distinguished service in the advancement of human welfare were presented to: Pearl Buck, author; Paul U. Kellogg, editor, *Survey Graphic;* Julian Huxley; Dr. Carl V. Reynolds, state health officer, North Carolina; Dr. George M. Cooper, assistant state health officer, North Carolina.

National Gastroenterological Association.—The eightieth birthday anniversary of Dr. Max Einhorn was celebrated at a stated meeting of the National Gastroenterological Association, held in New York on Monday evening, January 19th. The scientific program included a symposium on a Critical Study of the Diagnostic Procedures in Gallbladder Disease, from the Gallbladder Clinic of Ohio State University. Papers were presented by: Dr. C. Joseph DeLor, assistant clinical professor of medicine; Dr. John W. Means, clinical professor of surgery; Dr. George Y. Shinowara, chemical pathologist to the University Hospital, and Dr. Edmond J. Booth, associate in Gallbladder Clinic. The discussion was opened by Dr. Paul C. Swenson, Dr. James M. Surver read a paper on Carcinoma of the Stomach and it was discussed by Dr. A. A. Berg. The next meeting of this society will be held on Feb. 16th.

Social Hygiene Day in New York.—The Sixth Annual Social Hygiene Day will be observed by the New York City Health Department on Thursday, February 5th. Events planned by the Department to mark the day include motion pictures, lantern slides and strip films, as well as short talks by eminent public health officials. The program will be presented in the auditorium of the Health Department building, 125 Worth Street from 1:00 to 3:30 p. m. on February 5th. Brief addresses will be made by Dr. John L. Rice, Commissioner of Health and president of the American Public Health Association; Miss Helen Harris, local supervisor of the National Youth Administration; and Dr. C. C. Pierce, regional director of District 1, United States Public Health Service. Following the broadcast other short talks will be given by representatives of the Army, Navy and Federal Security Agency.

National Social Hygiene day was observed on Wednesday, February 4th, with an all day meeting at the Hotel Astor.

TRIBUTE TO DR. JACOB SOLIS-COHEN

SOLOMON R. KAGAN
Roxbury, Mass.

Dr. Jacob da Silva Solis-Cohen of Philadelphia (1838-1927), was one of the founders of laryngology in America. He was among the first American surgeons to specialize in diseases of the nose and throat, and to study the use of the laryngoscope, and was also a pioneer in surgery of the larynx (1).

It must be borne in mind that when Dr. Solis-Cohen started to develop the specialty of laryngology, specialties, as a rule, were regarded by many physicians and surgeons with little favor, and by some of them with no favor at all. It is a fact that many colleagues considered the first American laryngologists as semi-demi-charlatans, and accused them of being engaged in unethical practice.

It is of interest to tell that the great surgeon, Samuel D. Gross, was among those authorities who rebuked the specialist-laryngologists of his time. Once during a surgical clinic he introduced Dr. J. Solis-Cohen to his clan as a man fast leaving the ranks of legitimate practice to became engaged in a narrow specialty, and concluded: "Why he devotes most of his time to a cubic inch of the human anatomy. Some day I suppose we will have specialists confining themselves to diseases of the navel!"(2)

Dr. Solis-Cohen, however, enthusiastically continued his work, and succeeded in popularizing the specialty of laryngology. A great number of his pupils, assistants and associates later became themselves great teachers, investigators and contributors to this specialty.

In connection with this, it is of great interest to present the following address that was delivered by Professor Alevander W. McCoy at the testimonial dinner to Dr. J. Solis-Cohen given by the section of laryngology of the College of Physicians and his former assistants, March 15, 1910, in honor of his having completed half a century of active practice.

Dr. MacCoy's Address

It has taken fifty years to bring to me the great honor of being toast-master tonight. Some, in the name of common justice, may question the good taste or fitness of my advancement here. To speak frankly, I was the only eligible candidate. Seniority out-ranked you all. I take it there is no one present who will dare to dispute my claim to being the oldest living graduate present, with one notable exception. Knowing, therefore, the "why" I humbly crave your courtesy. Being old enough for this occasion is the only title I have. The toast-master fears he is in a class with Methuselah, who, as Mark Twain says, "lived nine hundred and sixty and nine years,—but what of it? Nothing doing!" The chloroform age had not been discovered, so unfortunately the world had to grin and bear him.

We anticipate a real feast of reminiscences from our honored friend. We beg he will go back to his student life abroad, to his companionship with Dr. Louis Elsberg, Sir Morell McKenzie, and to his experiences with our founder, Dr. Carl Czermak. The humorous side of his work when the art was new, will also interest us, and last but not least, the famous "lizard case," especially imported from Jersey.

And now, good fellows, the last word of your toast-master must be said. Here's a bumper to our guest himself, and to his golden jubilee in medicine! I take profound pleasure in presenting to you, Dr. J. Solis-Cohen.

Dr. William L. Rodman

When the committee heard that so distinguished a man as the one about to address us was to be present at our dinner, it was greatly elated, first, because it realized what a weight of testimony he would add to our appreciation of Dr. Cohen, and second, because it knew that Dr. Cohen and all of us would get this testimony in a good speech! He was a pupil of Dr. Cohen's; —some of us here may not be aware that this well-known surgeon has been interested in laryngology. This gentleman has the good fortune to come from one of the most famous regions in the land,—the heart of the Blue Grass. We are sure that her heart must have been wrenched when he left her for us, our city and our profession have received the balm! Connected for some years with a sister medical school as surgeon and professor of surgery, his technique has had wide admiration, while his ability as a teacher had placed him in an enviable position. The gentleman is an earnest disciple; his writings are known everywhere, and his ability along special surgical lines has made him envied by us all.

It gives me great pleasure to present, Dr. William L. Rodman.

Dr. Arthur W. Watson

Gentlemen, there are few of us who can be said to make an after-dinner speech joyfully! Although our hearts may generously respond to the occasion, our natural modesty often retards our tongue. Tonight we are to have the felicity of listening to a gentleman who has overcome natural tendencies, and, because of his high esteem for Dr. Cohen, consents to speak to us. He is recognized as one of our ablest and most skillful "doers". Every man here will agree that he is a "wizard." I call upon Dr. Arthur Watson.

Dr. Charles E. de M. Sajous

Gentlemen, I have the honor of presenting to you, one of the "Old Guard." We worked together with Dr. Cohen. Our friendship has continued all these years, and I hope it may never be broken.

Early in his career he showed his true mettle, and from the first, made a reputation greatly to be admired. For reasons then unknown to us, he sailed away and made his home in the French Capital. All these years (while he was away), he must have had an inspiration and this led him to most profound study in physiological research. For years his studies possessed his mind. His genius finally evolved a theory so novel and interesting, that the entire medical world became earnest and thoughtful observers. His erudition and vast industry evolved a final logical expression in his masterly work on ductless glands, and their place in the human economy. A new system of physiological therapeutics was the crowning work. This man, al-

ready distinguished and honored by titles, medals, and ribbons, graciously appears with us to add his testimony in honor of our distinguished guest. I take great pleasure in presenting Dr. Charles E. de M. Sajous.

Dr. Arthur Ames Bliss

The city of Philadelphia contains among her medical profession more modest able men than any other city in the land. The gentleman whom I am about to call for a speech, has ennobled our specialty by his devotion, great skill, and high aims. (Not only does he aim big, he makes a bull's eye every time.) Our literature has been enriched for many years by valuable monographs and other papers from his pen. He is fond of travel and wisely goes abroad to enjoy the "good old summer time." His culture makes him love to wander in the Black Forest where the beautiful natural scenery gives him his uplift, and where the fairy tales of this poetic region afford him great entertainment. If you have not guessed his identity by what belongs to him,—then your "ignorance is—Bliss."

Dr. D. Braden Kyle

Any previous remarks concerning natural diffidence need not trouble us in the case of our next speaker. His golf-playing has been the means of making him very fluent. His perfect language, learned on the links at Pinehurst, enables him to make good at any time, and on any occasion. The gentleman originally came from a state that is "round at both ends and 'hi' in the middle." (He has a rich fluid running through his veins which empties into the vena cava). The state of Pennsylvania and the City of Philadelphia can certainly be congratulated on having won such a distinguished man. The science and art of laryngology and rhinology have been advanced by his original studies. His research laboratory investigations have benefited both specialties. Occupying a distinguished chair, he has enriched its teaching to a marked degree. We all admire him for what he is and what he has done. I am happy to call on Dr. D. Braden Kyle.

Dr. Charles Grayson

Another great institution in the city has had the good fortune to possess on its staff as splendid a man, and as distinguished a practitioner, as could well be imagined. His efficiency is of such a high order, and his capacity for teaching so acceptable, that the stones would cry out, if for any reason his place was vacant. This man's personality is so great and his clientele so in love with him, that it is a hopeless task to proselyte any of them! He comes of a distinguished stock, and has added to the nobility of his forbears, and for his true worth we honor him. It is needless, gentlemen, to mention the name of Dr. Charles Grayson!

Dr. George Stout

Gentlemen, another diffident man is willing to speak. He is so generous by nature, and so appreciative of this occasion, that he is anxious to offer up his sacrifice. He has a story to illustrate his position. I will tell it for him. Two old farmers up in Maine met on a train. "Hey Josh," said one, "where be yeow a-goin'?" "I be goin' daown to Bangor to git drunk, and Gosh how I do dread it!" (We appreciate his state of mind and point of view. Such a busy man as this gentleman is, with his fine capacity for work ought to be doubly appreciated when he consents to speak, the compelling reason being his admiration for Dr. Cohen and his deeds.)

I call on Dr. George Stout, may his shadow never grow less!

Dr. J. T. Rugh

Gentlemen, we now present to you a man for some time not only an assistant to Dr. Cohen, but associated with him in his office. This gentleman has deserted our ranks for a more lucrative practice. One can hardly blame his change—his desire "to make both ends mete" is a natural instinct. Furthermore, we judge that he may have found noses out of joint less amenable to cure than the "feat" of Talipes Equinus and Talipes Varus. This man has made good in his special calling, and we congratulate him for what he has accomplished, and bespeak for him a brilliant future. We are now to enjoy a response from Dr. J. T. Rugh.

Dr. Joseph H. Gibb

And now, gentlemen, last but not least, a man "after mine own heart." Genial, a fast friend, and as square a man as ever lived. We have meandered over the links at golf (mostly "in the rough"). We have organized our exclusive club comprising two people—"him and me." We have named it the T. and T.—thick and thin. Although I am very fond of this man, occasionally he appears unreasonable: as two members of our committee were already down to monopolize the talking, we thought he had better be a good listener, but he demurred and made a great ado. We had to tell him that if he was willing to wait until the last he could speak, but we had to tell him of the Scotch Dominie who, one dark night going over the moors, fell into a pit—etc., etc. Gentlemen, I present Dr. Joseph Gibb.

References

1. KAGAN, S. R.: Jacob da Silva Solis-Cohen, *Medical Life*, New York, Aug. 1937, p. 295.
2. KAGAN, S. R.: *Leaders of Medicine*, Boston, 1941, p. 64.

176 SEAVER STREET

Connotations

The history of enemata is an ancient procedure. The administration as practical today has been attributed to Marco Gatemaria who died in 1496.

* * *

In 1841, Morton described the conjoined tendon.

* * *

Auenbrugger is credited with recognition of the technique of percussion of the thorax. His work was published in 1761.

* * *

The Spanish fly is not a fly but a beetle technically known as Cantharis vesicatoria.

* * *

Raymond Vieussens published in 1684 a text-book known as *Neurographia Universalis*. He quite accurately described the brain and spinal cord; at least he attacked the belief that the spiral cord was a prolongation of the brain.—H. J. Simms

Book Reviews

Control of Communicable Diseases

Communicable Disease Control. A volume for the health officer and public health nurse. By GAYLORD W. ANDERSON, A.B., M.D., professor and head of the department of preventive medicine and public health, University of Minnesota; formerly deputy commissioner and director of the Division of Communicable Diseases, Massachusetts Department of Health; and MARGARET G. ARNSTEIN, R.N., M.A., M.P.H., district supervising nurse, New York State Department of Health; formerly associate professor of preventive medicine and public health and director of the course in public health nursing, University of Minnesota. New York: The Macmillan Company, 1941. Pp. 434. Price $4.25.

This book is intended for the health officer and the public health nurse but is a valuable source of information for the physician. It presents two distinct problems, protection of the individual and protection of the community. Both are indispensable but the methods necessarily differ. Just as the test tube experiment must be modified for large scale adaptation, so must individual disease-control be patterned according to community needs. Procedures effective in protection of the individual are often too expensive and cumbersome to apply *en masse*. The problems considered are those confronting health bureaus, schools, nursing centers and community agencies. The diseases included are those of major interest to most communities. Discussion of each, however, is preceded by a consideration of the mechanism of the infection process and the control measures found effective to date. There is no inclusion of detail involving hospital care but it is an excellent manual for the health officer confronted with community epidemics.

National Stamina

Toughen Up, America! By VICTOR G. HEISER, M.D. New York and London: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. Pp. 228. Price, $2.00.

The author preaches the doctrine of individual perfection as a basis for improving the stamina of the nation. He urges fitness for all in the struggle thrust upon us. The book, therefore, deals with the proper nutrition at various age levels, resistance to infection, advantages of alternating rest and recreation and inculcation of desirable habits in everyday life. Every human being should abide by these indications and "pray that God give him strength to face a fact though it slay him".

Mental Disease

Mental Disease and Social Welfare. By HORATIO M. POLLOCK Director of Mental Hygiene Statistics, New York State Department of Mental Hygiene. Utica: State Hospitals Press, 1941. Pp. 237. Price, $2.00.

This condensed volume by Horatio M. Pollock, of the New York State Department of Mental Hygiene, is a rather concise picture of the incidence of mental disease in this country. While it is mainly statistical in nature, it also deals with the economic factor and the social significance of mental maladjustments.

Some of the more modern treatments for mental conditions are discussed, especially the metrazol treatment, but other modern methods are not gone into very thoroughly.

The chapter on the paroled patient is rather interesting, and there is a short chapter on mental disease in Peru which was evidently included on account of the author's personal experience which holds interest on account of the methods used in contrast to those that are employed in this country.

Nursing as a Career

Your Career in Nursing. By CECILIA L. SCHULZ, R.N., Author of *How to Enjoy Health.* New York and London: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. Pp. 205. Price, $2.00.

In the face of the present national crisis, a Nursing Council on National Defense has been organized and is at work. Its members are nurse-leaders rich in experience and blessed with foresight. They are resolved that the quality of tomorrow's nursing service must not be jeopardized by the urgency of today's nursing needs; that the present standards of nursing education in America must be maintained, come what may. Thus, the girl who chooses nursing as a career at this time will be obliged to meet the same requirements as she would under normal conditions. The characteristics of a good nursing school and the ideals that govern the nursing profession will not change under stress. Therefore the fundamentals covered in this volume will hold, regardless of any turn in national or international events may take.

Taber's Cyclopedic Dictionary

Taber's Cyclopedic Medical Dictionary. Including a Digest of Medical Subjects, Medicine, Surgery, Nursing, Dietetics, Physical Therapy. By CLARENCE WILBUR TABER and Associates. With 273 illustrations. Philadelphia: F. A. Davis Company, 1940. Pp. 1488. Price, thumb-indexed, $3.00; plain, $2.50.

This dictionary has been written by a corps of medical specialists. It is as much a dictionary of medical subjects as it is a comprehensive medical lexicon. With its fifty thousand words, including the latest terms and drugs, this work will answer the requirements of all professional groups concerned with all branches of medicine. This volume is so complete that it ought to be in the hands of everyone reading medical literature.

Adolescence

Coming of Age. By ESTHER LLOYD-JONES, Ph.D., professor of education, Teachers' College, Columbia University, New York, and RUTH FEDDER, Ed.D., guidance counselor, Cheltenham Township Public Schools, Elkins Park, Pa. New York and London: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. Pp. 280. Price $2.50.

This book shows how adolescence is devoid of rosy features. To the young man or woman, life presents many problems that are real and perturbing. Some of the problems are related to economic cycles, some to personal progress and others to internal drives. This very process of growing up, of gaining independence from the family group, of establishing a successful home, or turning from self-concern to concern for others, of discovery of a set of individual values by which one can live either thrill or discourage the being involved. This book is addressed primarily to the young people themselves by virtue of the experience of the authors with adolescence. As a whole all discussions are down to earth encompassing the current difficulties of personalities in-the-making.

Critique

Let Us Consider Campbell's and Chambers'

The New York *Herald Tribune* of January 20, 1934, announced the death of the fabulous Frank E. Campbell who invented the modern mortician and his flossy funerals. He died of heart disease at sixty-one. He made the public funeral-chapel conscious, was a Broadway celebrity, and had a most select burial list. He was almost certainly the best-known undertaker in the world, a smiling, gray-haired man of generous build, who had nine Rolls-Royces, three chauffeurs, a $400,000 yacht named *Pal o' Mine* with a crew of nineteen, an estate at Larchmont with art objects galore, and he owned New York apartments and hotel property valued at four million dollars.

Mr. Campbell made an early start in his somewhat lugubrious profession, for he became assistant to the village undertaker when he was only twelve, one task being to saw lumber and help make caskets. He directed his first funeral at eighteen, reading the ritual when the minister was too ill to officiate. Dissatisfied with his dollar-a-day wage he went to New York and found employment with the man who had buried General Ulysses S. Grant and many other notables of two generations ago. His first bedroom was in the cellar of the mortuary chapel; he was paid seven dollars weekly and sent half of it home to his mother.

Glamorous Funerals

Ultimately he had a vision. He decided to take the curse off funerals. He extracted the sting of death. He built a million-dollar Funeral Church for this purpose and filled it with expensive marbles and bronzes, Oriental rugs and teakwoods, tapestries and oil paintings, and it boasted a Napoleon Room, a Broadway Room, a Red Room, a Gold Room, a Blue Room, a non-sectarian church with an elevator to hoist coffins slowly to view, and a piano which once belonged to a European king. He tried to surround death with beauty instead of horror, though he went broke several times trying to do it. But shrewd press agents knew the remedy for that.

For ultimately Mr. Campbell conducted the funerals of the very elect: Rudolph Valentino, Texas Guinan, Anna Held, Jeanne Eagels, Olive Thomas, Roscoe Arbuckle, Oscar Hammerstein, Vernon Castle, Nat Goodwin, Nat Wills, Dave Montgomery, William Dean Howells and Mannie Chappell, the wine agent. He made the undertaker over into a "mortician" and substituted "interment" for burial. He was lavish with advertising and press agents. He knew this was an apartment age and that an apartment was no place to put on a first-class funeral, so he transformed the gloomy room of the average undertaker to the spacious chambers of his corpse paradise.

Moreover he did what his clients wanted. He scattered the ashes of a ninety-two-year-old woman from the Statue of Liberty; he would have thrown those of another client from the top of the Woolworth Building, but the management selfishly objected. He bought an airplane hearse to scatter ashes to the four winds, sometimes making one trip serve for twenty thoroughly ashed clients. The ashes of fifteen others were dumped into the sea from a boat, with appropriate ceremonies. On one occasion the unclaimed ashes of 210 clients were blended for a mass funeral, though one urn had to be held out at the last hour when four women claimed the mineral matter it contained, though it turned out to be an Indian prince in disguise. Mr. Campbell was also patriotic for he offered free funerals to war veterans and had some acceptances. He presented a radio to the Larchmont police and held authentic art shows in his Funeral Church. He knew the secret of mass production. He supervised forty thousand funerals and, during an epidemic, he managed to pass along forty-five clients in a single day, sixteen of them in four hours, conducting services in all languages, for in one day he had to officiate for a Hindu prince, an Eskimo, and a veteran of the Boer War.

The Federal Trade Commission Disposes of Chambers

There are Campbells and Chambers and in Washington, D. C., there has long been The Greater Chambers Co., William W. Chambers, proprietor. On January 21, 1937 the Federal Trade Commission charged the Greater Chambers Co. with unfair methods of competition in advertising itself as "one of the largest undertakers in the world," and as having "Forty assistants, twenty-five cars, seven chapels, fourteen parlors." Bluntly and prosaically the Commission declared that Chambers was not one of the largest, did not employ forty undertakers, assistant undertakers, or assistant funeral directors, and did not operate the advertised number of cars, chapels, and parlors. The company was also accused of falsely advertising that services, cars, hearses, and other facilities furnished in connection with the casket were sold free; that $500 worth of service was rendered with each funeral; that customers received a $300 to $500 funeral for $165 to $265; that the Chambers steel vault advertised for $85 was really worth $150, was air-sealed, waterproof, and airtight, and fully answered the purposes of a $5,000 mausoleum, being the finest burial vault obtainable. The prices charged were the usual and customary ones for the services rendered, said the Commission. Well, as between Campbell's and Chambers' I think I'd take Campbell's, if I could afford it. Nothing like a flashy, flossy, funeral as I see it.

Discouragement of a Great Natural Enterprise

Notice of Judgment No. 95 issued by the Food and Drug Administration pursuant to its enforcement of its new Food, Drug, and Cosmetic Act concerns the adulteration and misbranding of a phenomenal product named Cotec. The Cotec Co. of Lynn, Mass., suffered the destruction of nine cases of the material by default decree of condemnation. We read the reason given thus: "Analysis showed that the article consisted essentially of fat and excrement. Adulteration was alleged in that the article consisted in part of a filthy substance." The product was recommended as an efficacious preparation for the treatment of piles, which in part consisted in putting it back where it came from apparently. It was said also to give relief to all symptoms of piles "among which are a kind of tenesmus" and a "throbbing of the part." The point is that we have here a great agricultural industry of enormous potentialities. It is also a typically

rural industry. Some man located in a small town far enough away from new-fangled sewage-disposal systems could make a million at it. It is all a question of securing the raw material. It seems well enough that the Food and Drug Administration left the Department of Agriculture. It is obviously discouraging those industries most likely to raise the farmer's income. The Department instead wishes to do all it can to stimulate such magnificent purely American enterprises which would be a boon to rural districts where the material is so readily obtainable. If we could just get Hitler we'd have material enough to make all the Cotec we need for the next century.

THE CRITIC

Medicoliterary Notes

The technical achievements of physicians is the topic to which the November 1941 number of *Ciba Symposia* is devoted. Special articles include Physicians as pioneers of air travel; Physicians as inventors of steam engines; Medical men as investigators of magnetism and electricity; and Physicians as builders of optical instruments. The authors of all the above mentioned contributions are Drs. G. Schaefer and W. Naumann. It seems to be little known that physicians have taken prominent parts as pioneers in one of mankind's greatest sport achievements—the climbing of high mountains. The world's first great achievement of this kind, the reaching of the 15,782-summit of Mont Blanc, the highest peak in Europe, was accomplished by a doctor. He was Michel Gabriel Paccard, a practitioner of Chamonix. On August 8th, 1786, with a local guide as his sole companion, the plucky doctor set foot for the first time on the highest piece of ground ever trod by man. Many of the other record breaking climbs of mountaineering history were either led by a physician, or included a physician in their personnel. Those interested in pursuing further this fascinating subject are referred to a recent most interesting volume published by Lippincott, namely, *High Conquest,* by James Ramsey Ullman. The book is a history of high mountain climbing on all the continents of the world brought up to date. The illustrations are beautiful reproductions of photographs of many of the high spots of the earth.

* * *

The leading article in *Public Health Reports* for November 1st, 1940, is a report on the frequency and volume of doctors' calls among males and females in 9,000 families, based on nation-wide periodic canvasses carried on from 1928 to 1931 inclusive. The compiler is Selwyn D. Collins, statistician of the U. S. Public Health Service.

* * *

One of New York's Fifth Avenue bookstores reports that its steady best seller is not the latest "moving novel" or "stirring biography." It is that for-all-ages and all-time book, Frazer's *Golden Bough,* one volume, condensed edition. Does this indicate to analysts of the mass mind that some of us are really beginning to wonder why, and trying to understand why, human beings behave the way they do in this upset world in which the behavior of some of us seems beyond human understanding?

* * *

Thailand, the New Siam, by Virginia Thompson, tells us that Chulalonghorn, father of the abdicated king of Siam, had one hundred and thirty-four sons, two hundred and thirty-six daughters, and six hundred widows of various ranks. "What a Christmas shopping problem!" exclaims one reviewer of the volume, a publication of the Macmillan Company. Other recent products of the same company are *The Philippines,* by Joseph Ralston Hayden, and *Something Went Wrong,* by Lewis Browne. In the latter book the author looks objectively at world history and tries to discover what happened, when, where, and why, to bring on the present catastrophe. The book is written for the average man who hasn't much time to read but who likes to keep up to date in his thinking.

* * *

Shoe Sizing and Fitting: *An Analysis of Practices and Trends,* is the title of *Miscellaneous Publication* Number 469 of the U. S. Department of Agriculture. The compiler is Carol Willis Moffett of the Bureau of Home Economics. Topics of main sections include discussions of better fitting footwear, the background of present practices, how last manufacturers arrive at size and fit, how shoe manufacturers influence fit, how retailers interpret fit, consumer attitudes toward size and fit, and measurements, new methods, and new standards in size and fit.

* * *

Due to the complicated combustion and distillation methods of the Middle Ages and subsequent centuries, the art of furnace construction reached a high state of development, according to Dr. G. S., contributing to *Ciba Symposia.* During the seventeenth century, Jean Brouaut, a French physician and chemist, built a furnace in connection with his alchemical experiments in which the consumption of fuel was supposed to take place in a very economical manner. His economical furnace was a continuous burner which could be used also for heating rooms. The most intense heat was achieved in a fire tower placed on top of the furnace. Fruit could be dried and food cooked inside the furnace, which had also round openings in which distilling vessels could be placed. After the furnace had once been filled with coal the first continued to burn for more than a day.

* * *

A directory of state and insular health authorities for the year 1941 is published in the November 7th issue of *Public Health Reports.* This directory lists the personnel holding major administrative posts, that is, the chiefs of departments, divisions, bureau and special activities. Members of health boards other than the health officer, are not included.

* * *

The *Kalends* of the Waverly Press gives us the following gem from *Godey's Lady Book,* circa 1853: "The perfect hostess will see to it that the works of male and female authors be properly separated on her book shelves. Their proximity, unless they happen to be married, should not be tolerated."

MEDICAL RECORD

INCORPORATING THE
New York Medical Journal, Philadelphia Medical Journal
Medical Record, Medical News, Medical Herald
Kansas City Medical Index-Lancet, Medical Fortnightly,
St. Louis Clinique, General Practitioner, Laboratory News

Published on the first and third Wednesday of each month by
THE MEDICAL JOURNAL AND RECORD PUB. CO., INC.

GREGORY STRAGNELL, M.D. - - - - - *Editor*
A. M. MARLATT - - - - - *Assistant Editor*
N. F. HANF - - - - - - *Business Manager*
C. A. MCHALE - - - *Advertising Manager*

Subscription Price: Under Domestic Postage, $4; Foreign Postage, $5.50; Single Copies, 25 cents.

Remittances should be made by New York Exchange, post office, or express money order, payable to The Medical Journal and Record Publishing Company, Inc., or by registered mail, as the publishers are not responsible for money sent by unregistered mail. Remittances from Foreign Countries should be made with International Money Orders.

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We would appreciate any items of current interest which our readers may send in.

WEDNESDAY, FEBRUARY 4, 1942

Medicolegal Notes

County Not Liable to Pay Patient for Hospital Nurses' Neglect

The fact that a public hospital admits certain paying patients does not convert it into a proprietary or private hospital. Griffin vs. Colusa County, California District Court of Appeal, 113 P. 2d 270. The court made a distinction in this respect between a city and a county. "Countries are state agencies which exercise within their boundaries the sovereignty of the state, and in the absence of a specific statute imposing liability upon them they are no more liable than the state itself. Cities, however, are municipal corporations and not state agencies."

This was an action by a pay patient against a county, its supervisors, the director of the county hospital and two of its nurses, for injuries to the plaintiff resulting from the alleged negligent failure to furnish plaintiff with proper nursing care and attention in that they left plaintiff unattended and as a result she fell from her bed and was injured. There was no allegation that the director ordered anyone to do or refrain from doing anything causing the injuries, or that plaintiff contracted with the director or that her personal care or attention devolved upon him, or that he selected or employed the nurses or was responsible for their supervision. It was held the petition stated no cause of action against the director.

The county and its supervisors were not liable because the county acted in its governmental capacity and was not liable for its employees' negligence.

The situation of the nurses was considered somewhat different from that of the director. The care and attention of plaintiff was personally entrusted to them. When one has undertaken to render assistance or care, even if a volunteer, the law imposes a duty of care toward the person assisted. They were therefore required to answer the complaint.

The plaintiff called the attention of the court to the recent cases of Silva vs. Providence Hospital, 14 Cal. 2d 762, 97 P. 2d 978, and England vs. Hospital of Good Samaritan, 14 Cal. 2d 791, 97 P. 2d 813, as showing a tendency to reexamine the law with reference to the immunity granted counties because of injury inflicted upon those who are compelled to seek their services. The court repeated its distinction between classes of hospital, stating that: "These do not, of course, discuss the responsibility of a state agency and deal only with private charitable institutions."

Judgment for the county, its supervisors and the hospital director was affirmed. As to the nurses, it was reversed, with the right to plead further, if so advised.

"Consultation" by Life Insurance Applicant Defined

Consulting a physician, within the meaning of an application for life insurance, depends upon the character of the interview. Combs vs. Equitable Life Ins. Co., of Iowa, 120 F. 2d 432, 4th C. C. A., affirming Federal District Court for West Virginia, 34 F. Supp. 1002. Under the Virginia law, which the court considered to be supported by the better considered authorities from other jurisdictions, if the consultation concerns a serious disease, there has been a "consultation" within the meaning of the term, but if medical advice is sought for some trivial disease, it has no legal effect upon the contractual relations of the insured and his insurer. If it can be regarded under the evidence as beyond fair debate that the insured understood from the physician that his symptoms were serious and indicated a malady which involved real impairment of his health or might affect his longevity, then as a matter of law the Virginia court would say there could be no recovery. Otherwise, it may be a question for the jury to determine.

Qualification to Testify as Expert

In a second degree murder prosecution a college graduate, who had been engaged in biological and chemical research for several years, a chemist in a city police department, working with the medical examiners, who had worked on cases involving blood stains and fibres and various problems relating to toxicology as an expert, was held competent, after examination and determination of the percentage of alcohol present in the brain, blood, and stomach contents of the victim, that the amount of alcohol found would cause the average normal man of forty-nine years of age to be definitely under the influence of liquor and to manifest some unsteadiness of motion. Commonwealth vs. Capalbo, Massachusetts Supreme Court, 32 N. E. 2d 225.